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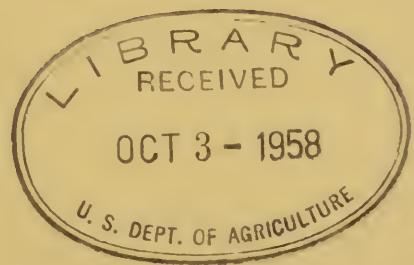
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# RED RIVER BACKWATER AREA (VICKSBURG DISTRICT) LOUISIANA

## MISSISSIPPI RIVER AND TRIBUTARIES PROJECT REVIEW



SOIL CONSERVATION SERVICE  
ALEXANDRIA, LOUISIANA

October 1957



RED RIVER BACKWATER AREA  
(VICKSBURG DISTRICT)  
LOUISIANA

MISSISSIPPI RIVER AND TRIBUTARIES  
PROJECT REVIEW

REPORT ON  
PRESENT AND ANTICIPATED AGRICULTURAL CONDITIONS

Prepared By The  
U.S. Department of Agriculture for the Mississippi River Commission

Soil Conservation Service  
Alexandria, Louisiana  
October, 1957



### AUTHORITY

This report has been prepared by the Soil Conservation Service, U. S. Department of Agriculture, covering studies made under authority of Sec. 6, P. L. 566, 83rd Congress and upon request of the Mississippi River Commission. The basis for study was agreed upon as set forth in the Project Study Statement dated August 8, 1957.

### AGENCY PARTICIPATION AND RESPONSIBILITIES

This report is based on data at hand and the combined judgement of agricultural technicians most familiar with the project area and its agricultural conditions and problems. Under a U. S. Department of Agriculture memorandum of understanding, consummated February 2, 1956, the U. S. Forest Service, the Agriculture Research Service and the Soil Conservation Service have each participated in the study.

The acreages and intentions of woodland owners, other than farmers, were developed by the U. S. Forest Service. All woodland yields, values and costs were developed by the U. S. Forest Service.

Projected price and cost data for farm crops and livestock enterprises, and interest rates for amortization and discounting were developed by the Agricultural Research Service. They also assisted the Soil Conservation Service in studies of field crop and pasture costs and in overall economic procedures.

The Soil Conservation Service, through the office of the State Conservationist, Louisiana, has been responsible for co-ordinating and conducting the project studies and preparing this report.

### PRESENT OR EXISTING CONDITIONS

A soil classification survey was made of the entire area and the various soil unit acreages were tabulated by projects, reaches, and zones to be used as a basis or foundation for the entire study.

Yield tables were developed for each project having a different soil production potential. Soil unit yields were for undrained land, drained land, and drained land irrigated for each crop.

Land use and cropping patterns were developed by soil units.

All of the above was then used in preparing tables for present conditions.

## FUTURE CONDITIONS AND NET RETURNS WITHOUT THE PROPOSED PROJECT

Using projected price and cost data supplied by the Agricultural Research Service as a guide, the Soil Conservation Service developed a cropping pattern for the future without the project which would reflect major changes in net income of the various crops grown in the area.

Acreages based on project lines supplied by the Vicksburg District, Corps of Engineers, were reduced by the acreages of dedicated woodland supplied by the U. S. Forest Service, to obtain the potential land for conversion. This acreage was further reduced by acreages of soil units of low income production, and by acreages that would not be converted without the proposed project, based on trends in land conversion in undeveloped or partially developed areas. From the new acreage (present plus future without the proposed project) was then subtracted the acreage that could be drained without the proposed project. Expected participation in drainage with the proposed project was then determined.

The future without project soil unit acreages; the future cropping pattern; weighted yields in proportion to undrained, drained, and drained land irrigated; projected prices; and projected costs were then used in determining the net return for the future without the proposed project. Included in these calculations are future net returns for woodland supplied by the U. S. Forest Service, which were applied to acreages of woodland expected to be converted in the future with the proposed project.

## FUTURE CONDITIONS AND NET RETURNS WITH THE PROPOSED PROJECT IN PLACE

Acreages based on project lines supplied by the Vicksburg District, Corps of Engineers, reduced by acreages of dedicated woodland supplied by the U. S. Forest Service, gave the potential woodland for conversion. This acreage was reduced by that amount occurring on low income producing soils and by estimated lack of farmer participation. This acreage plus the acreage used in future without the proposed project made up the acreage by soil units for future with the proposed project conditions.

Based on project lines supplied by the Vicksburg District, Corps of Engineers, and past experience in farmer participation in drainage and irrigation in developed areas, it was possible to estimate the percent by soil units of land that would remain undrained, that would be drained, and that would be drained and irrigated in the future with the proposed project. (Availability of irrigation water, need for irrigation and trends toward irrigation were important considerations in estimating the acreage expected to be irrigated).

The increased proportion of land drained allows a more diversified cropping pattern under future with project conditions. With long-term projected prices and a free economy,

farmers will tend to adapt their crops to soils in such a manner as to obtain the highest net return. This will indicate a somewhat different cropping pattern than would occur under the future without project conditions.

The future with proposed project soil unit acreages; the future with proposed project cropping pattern; weighted yields in proportion to undrained, drained, and drained land irrigated; projected prices and projected costs were then used in determining the net return for future with the proposed project in place.

The Soil Conservation Service was also responsible for determining the cost of group drainage, farm drainage and land conversions.

#### METHOD OF COMPUTING AGRICULTURAL VALUES CREDITABLE TO PROJECT

For the purpose of this study it was considered that the authorized work was completed and that the individual sub-projects had received maximum development.

The basis for computing agricultural benefits attributable to the proposed sub-projects was the difference between the future net returns without the proposed sub-project and the future net returns with the proposed sub-project.

In the Bushley Creek, the Ouachita-Lafourche, and the Below Sicily Island sub-projects only those portions of zones A and B whose development was dependent upon the proposed project were considered.

In the Tensas-Cocodrie Pumping Plant sub-project the upper limit of effectiveness is the upper limit of the B-1 zone or 47.3' m.s.l. therefore none of the A zone and only a small portion of the B-1 zone entered into the net benefits attributed to the proposed sub-project.

#### LIMITS OF APPLICATION OF ESTIMATES

The estimates cover an appraisal of the agricultural values and costs that can be expected as a result of agricultural drainage in association with installation of the proposed project works. However, the data include no estimates of flood damage reduction, its values or costs, though the land use and cropping estimates reflect the flood protection that would be afforded by the proposed project works. Average flood-free yield estimates have been used throughout the study so that they can be used as a basis for calculation of flood damage reduction by the Corps of Engineers, based upon its own hydrologic studies. The Department of Agriculture, having made no hydrologic studies of its own in the area, has developed estimates on the basis of hydrologic data provided by the Corps of Engineers, including the delineation of limits of project effectiveness, and maximum overflow that

established the conditions for project study. Further studies may result in revised hydrologic data that would require modification of the agricultural data contained herein.

In determining drainage needs under future conditions with proposed project, all soils of such characteristics as to not require drainage have been eliminated from drainage evaluations. Similarly, all soils that could be drained under future without project conditions, have been eliminated.

#### DESCRIPTION OF PROJECT

This study considers four sub-projects of the Red River backwater area as follows:

1. Ouachita-Lafourche. The proposed protection works would consist of a loop levee extending from the eastern edge of the city of Monroe, Louisiana, to the west bank of Bayou Lafourche, thence down the west bank of Bayou Lafourche and Boeuf River to the vicinity of Horseshoe Lake, thence looping back up the east bank of Ouachita River to a tie with the terminus of the existing Ouachita River levee. Along the improved channel of Bayou Lafourche, the protection works will be provided by closure of openings in the existing spoil banks. Interior drainage would be provided by construction of an intercepting ditch parallel to the levee along Bayou Lafourche and Boeuf River to a connection with a floodgate in Grassy Lake. A sump would be provided above the Grassy Lake outlet for storage of excess runoff. For the purpose of this study, it is assumed that the existing project on Boeuf-Tensas River and Bayou Macon Project is completed and the area contained has reached the full development resulting from the construction of the project.

2. Bushley Creek. The plan of improvement consists of a levee along the right bank of Ouachita River from Harrisonburg south to Little River, and along the north bank of Little River to the hill line near Rhinehart. Interior drainage would be evacuated through a floodgate in Bushley Creek. A sump would be provided above the Bushley Creek outlet for storage of excess runoff.

3. Below Sicily Island. The proposed plan of improvement would protect an area south of Sicily Island by the construction of a levee extending south from the southwestern edge of the Sicily Island hills along the east bank of Ouachita River, thence up the right bank of Tensas River to a point opposite Sicily Island and a tie to the Sicily Island ridge immediately above the town of Sicily Island. Interior drainage would be evacuated through natural streams improved as necessary to a connection with a floodgate in the southwestern portion of the area. A sump area would be provided in the southwestern portion of the area for storage of excess runoff. For the purpose of this study, it is assumed that the existing project on Boeuf-Tensas River and Bayou Macon

Project is completed and the area contained has reached the full development resulting from the construction of the project.

4. Tensas-Cocodrie Pumping Plant. The Tensas-Cocodrie ring levee is complete and it is assumed that the area contained has reached full development. This study was to determine what additional benefits could be secured by lowering the existing sump by means of a pumping plant. The upper limits of effectiveness of the pumping plant is 47.3' m.s.l. which is the present maximum sump under the existing project. The area between elevation 47.3 and 45.6 m.s.l. (the maximum sump with pumping plant in operation) is designated as Zone B-1, and will receive essentially full protection. The area between elevation 45.6 and 39.5 m.s.l. (the 5-year frequency with pumping plant in operation) is designated as Zone B-2, and will receive partial protection. The area below Zone B-2 is designated as Zone C and will receive no project benefit. No Zone A was studied as it is assumed all benefits in the A-zone would accrue to the existing project.

All above proposed protection works, and the existing Tensas-Cocodrie Ring Levee Area, include an overtopping or fuse plug section to permit storage of backwater in the protected areas when floodwaters exceed the design condition. The frequency of this overtopping is assumed to be not greater than once in the lifetime of the project; therefore, it was assumed for the purpose of this study, that the areas will receive substantially complete protection from backwater flooding.

#### SOILS

Because of widely different characteristics the soils of the Red River Backwater Area were divided into three major groups, designated as the BOA problem area, the LT problem area and the BO problem area. These problem areas were then divided into soil units for the purpose of this study.

#### The BOA Problem Area:

Known geographically as the Ouachita Cone, the soils of this problem area are derived from the sediments of the Arkansas, Ouachita, and the Mississippi Rivers, which, with their tributaries, carry sediments eroded from a large part of the United States. The widely differing geologic sources and ages of material carried by these streams cause consequent differences in chemical and physical makeup of their sediments. The alternate flooding by one river or another or all rivers at once, each carrying different sediments together with the shifting of stream channels and consequent reworking of material has given rise to a rather unique conglomeration of soils which differ chemically and physically from soils found along the individual rivers.

The Arkansas River, which was the dominant influence on sedimentation in this area, changed its course many years ago and there has been very little recent deposition except in the

backwater areas; therefore these soils have lost much of their minerals through leaching and are rapidly developing terrace-like profiles.

The sediments from which these soils were formed, the process by which the sediments were deposited, and the geologic age of these soils all tend to make them less fertile than similar soils occurring along the Mississippi, Arkansas, and Red Rivers.

Within the BOA problem area are also several islands which are older geologically and have developed into true terrace. These soils are generally less productive than the better bottomland soils.

The BOA problem area was divided into the following soil units.

Soil Unit 1a - BOA - Fine textured, very slowly permeable, very poorly drained soils, bottomland.

Soil Unit 1a is very difficult to drain, till, obtain a stand of seedlings on and to irrigate. As the organic matter content lowers, all the above difficulties increase. When protected from overflow, and drained and managed properly, soil unit 1a will grow fair yields of pasture, oats and corn. Without proper management, this soil soon loses organic matter, becomes impervious and less productive, and is often abandoned.

Soil Unit 1 - BOA - Fine textured, very slowly permeable, poorly drained soils, bottomland.

Soil Unit 1 is rather difficult to drain, till, obtain a stand of seedlings on, and to irrigate; and as the organic matter content lowers, all the above difficulties increase. When properly drained and managed, fair to medium yields of pasture and fair yields of corn, oats, cotton, and soybeans may be obtained.

Soil Unit 2 - BOA - Moderately fine textured, somewhat poorly drained soils, bottomlands.

Soil Unit 2 is moderately difficult to drain, till, obtain a stand of seedlings on, and to irrigate; and as the organic matter content lowers, becomes more difficult to handle. When properly drained and managed, however, soil unit 2 can be expected to produce moderate to high yields of pasture, corn, cotton, soybeans, and oats.

Soil Unit 5 - BOA - Medium textured, moderately well, and well drained soils, bottomlands.

Soil Unit 5 is usually rather easy to drain, till, obtain a stand of seedlings on, and to irrigate. When properly drained and managed, these soils produce moderate to high yields for the area but generally require a more complete fertilizer than the heavier soils.

Soil Unit 11 - BOA - Medium and moderately coarse textured, well drained soils, bottomlands and natural levees or low terraces.

Soil Unit 11 in Louisiana is medium textured and requires some drainage, but it is usually easy to drain. This soil is easy to till, to obtain a stand of seedlings on, and to irrigate. Soil Unit 11 usually requires a complete fertilizer but under good management will produce high yields of crops adapted to the area. This soil is usually ideal for irrigation because of its permeability, slope and location.

The LT Problem Area:

Known locally as Macon Ridge these soils are formed from water deposited loess which has developed into loessial terrace soils. These soils are older geologically than either the BOA bottomlands or the BO bottomlands and thus differ considerably in profile development, mineral content and fertility.

The LT problem area was divided into the following soil units.

Soil Unit 8 - LT - Medium and moderately fine textured, poorly and somewhat poorly drained soils, bottomlands and terraces of tributary streams.

This soil is found in long narrow stream channels chiefly within the loess terraces and is made up mainly of reworked loess sediments.

Where flooding is not a problem, this soil will produce moderate to high yields if drained and properly managed.

Soil Unit 9 - LT - Medium textured, well and moderately well drained soils, loess terraces.

Soil Unit 9 is easy to drain, till, obtain a stand of seedlings on, and to irrigate. Soil Unit 9 is generally low in nitrogen, lime and potash and moderately low in phosphate but with proper fertilization and management can be expected to produce moderately high yields of all crops adapted to the area.

Soil Unit 9 contains small areas of Soil Units 10 and 8.

Soil Unit 10 - LT - Medium textured, poorly and somewhat poorly drained soils with fragipans and claypans, loess terraces.

Soil Unit 10 is moderately difficult to drain, till, obtain a stand of seedlings on, and to irrigate. As the organic matter content becomes lower, all of these difficulties increase. This soil is generally low in nitrogen, lime and phosphorus and moderately low in potash.

With proper drainage and management these soils will produce

moderate yields of pasture, corn, cotton, soybeans, and oats.

Soil Unit 10 includes small areas of soil units 9 and 8.

The BO Problem Area:

Soils in this area are very fertile bottomland soils deposited by the Mississippi River and its tributaries in recent time geologically.

The BO problem area was divided into soil units as follows:

Soil Unit 1 - Fine textured, very slowly permeable, poorly drained soils bottomlands.

This soil is very fertile but is difficult to till, drain and to obtain a stand of seedlings on, especially when the organic matter becomes depleted. Nitrogen is generally the only fertilizer required on this soil. When protected from overflow, drained and well managed, this soil will produce moderate to high yields of all crops grown in the area.

Soil Unit 2 - Moderately fine textured, somewhat poorly drained soils, bottomlands.

This is a fertile soil but requires drainage and good management for it to produce high yields of all crops grown in the area. This soil generally requires nitrogen, responds to phosphate and in some cases responds to potassium.

Soil Unit 5 - BO - Medium textured, moderately well and well drained soils, bottomlands.

This is a fertile, productive, easy to till soil and under good management will produce high yields of all crops grown in the area. This soil generally responds to nitrogen, phosphate and potassium.

Soil Unit 11 - BO - Medium and moderately coarse textured, well drained soils, bottomlands.

All the soil unit 11 mapped in Louisiana is medium textured and is fertile, easy to till and productive under good management. This soil generally requires a complete fertilizer.

COMPOSITION OF PROJECTS BY PROBLEM AREAS

The Ouachita-Lafourche area consists primarily of soils of the BOA problem area with a small percentage of LT problem area soils found scattered along the eastern boundary of the project. The Bushley Creek area contains about 60 percent soils of the BOA problem area, and 40 percent soils of the LT problem area. Below Sicily Island area contains about 60 percent soils of the BOA problem area, and 40 percent soils of the BO problem area. The Tensas-Cocodrie Pumping Plant area consists entirely of soils of the BO problem area.

### OVERALL LAND USE

The Ouachita-Lafourche Area consists of 79,612 acres of woodland, 500 acres of water and 42,421 acres of open land. Conversion from woodland to pasture and crop use has been slow due to lack of drainage outlets, the frequent overflow hazard, and in some locations poor soils (Soil unit la BOA).

The Bushley Creek Area consists of 42,923 acres of woodland and 11,196 acres of open land. Conversion from woodland to pasture and crop use has largely been confined to small ridges of terrace soils where the overflow hazard is not so great. The overflow hazard, lack of drainage outlets and in some locations poor soils (Soil units la BOA and 10 LT) has deterred farmers from converting more woodland.

The Below Sicily Island Area consists of 63,830 acres of woodland, 1,605 acres of water and 10,698 acres of open land. Conversion from woodland to pasture and cropland has been slow due to the overflow hazard, lack of drainage outlets and in some locations poor soil (soil unit la BOA).

Tensas-Cocodrie Area. The study of the Tensas-Cocodrie pumping plant is confined to that area below elevation 47.3' m.s.l. and is therefore largely woodland. Development has been slow at this elevation due to lack of drainage outlets and backwater. This area consists of 133,593 acres of woodland, 3,308 acres of open land and 5,400 acres of water. The open land is almost entirely in pasture.

### WOODLAND

Woodland use is governed primarily by owner policy, which is affected by accessibility, flood and drainage conditions and available markets for forest products. This picture is complicated by the mineral rights law peculiar to Louisiana, these rights being most easily retained by fee ownership, 16,000 acres, or 8% of the total woodland area studied in Zones A, B-1 and B-2 are reserved in forest cover. In addition to this are large areas in the C zones which are also reserved in forest cover. The managed component of the total of all zones includes ownerships ranging from 30,000 acres to less than 1,000. Larger ownerships are wood-using industry lands, or wisely managed properties held primarily for mineral rights. This also holds true for some small ownerships, while other small ownerships are managed by industrial foresters for the mutual benefit of owner and industry. As a rule, these woodlands are in better than average condition.

Slightly more than one-third of the reserved acreage is in unmanaged tracts held for mineral rights. Any saleable timber is disposed of by clear cutting while grazing is frequently done under lease. This results in a run down forest with high cull volumes, but these lands are still unavailable for conversion to agriculture.

Unreserved tracts generally receive minimum attention. Larger properties held for mineral rights are sometimes available for clearing on a leasing basis. These woods have usually deteriorated to the condition described above. Some owners with larger holdings seek the advice of consultants which results in various degrees of management, though rarely intensive, as marketing assistance is the main service desired. Farm woodlots, as a general rule, are sumps and drainage outlets. They furnish low grade products like fuelwood and fence posts while heavy grazing is the rule. Little management is applied to small ownerships not included in a farm unit, and present condition depends on the time of the last cutting. Some notable exceptions to this are found where medium and small ownerships are being placed under management by industrial foresters. Some of this acreage is not considered reserved, as there is no binding agreement between owner and company. Other small ownerships are cut conservatively although this is not the general rule.

Woodlands in larger blocks tend to be more inaccessible, resulting in lighter fire damage, and better quality second growth and yield. Grazing continues to be a problem due to the open range law and traditional attitude of local residents. Cutting is taking place throughout the area but production is much less than what could be expected under sound management. Based on forest sampling points little or no clearing has occurred in the past several years.

#### WOODLAND MARKETS

All merchantable grades of sawtimber cooperage material and pulpwood find ready markets throughout the project areas. Large and medium sawmills are located in Jonesville, Ferriday, Urania, Tallulah, Sonheimer, Vicksburg, Natchez, Monroe, Holly Ridge, Newellton and Waterproof. Most sawmills buy logs from contractors, as well as harvesting timber from their own lands. Quality veneer plants are found in West Monroe and Vicksburg, while Tallulah and Clayton are centers for box grade veneer manufacture. Tight cooperage plants operate at Monroe and Holly Ridge while slack cooperage finds an outlet at Sonheimer. Specialty products are marketed throughout the area, an example being pecan bat stock shipped to Tallulah and Ferriday. Hardwood pulpwood is trucked or shipped by rail to mills at Bastrop and Natchez.

#### CROPPING PATTERN

Cropping patterns vary with soil units, drainage conditions and by problem areas and, therefore, by projects; however the following is the general cropping pattern for the entire Red River Backwater Area for the various conditions studied.

The present cropping pattern is largely geared to present acreage controls. Cotton is usually grown on the lighter and better drained alluvial soils, unless a farm consists entirely of heavy or medium textured soils. In this case cotton is grown on the most favorable part of the farm from a standpoint of

fertility and drainage. Land that would normally be planted to cotton, but is restricted due to crop controls, is now used for production of soybeans, oats and corn, or for pasture. On heavy alluvial soils pasture is usually dominant followed by soybeans, oats, corn and cotton. On medium textured alluvial soils, cotton is grown extensively, followed by pasture, soybeans, corn and oats. On the loessial soils pasture is the predominant land use, followed by cotton, corn, soybeans and oats for pasture and grain.

The cropping pattern for future without project conditions is based on projected prices and undrained yields assuming that the cropping pattern would largely be determined by the net return of the various crops under predominantly undrained conditions for the entire Red River Backwater area. Under these conditions production of soybeans, oats, corn and beef would be more favorable, and production of cotton less favorable. On the heavier alluvial soils pasture, oats and soybeans would be the dominant crop followed by corn and cotton. On the medium and light textured alluvial soils soybeans, pasture and cotton would be the dominant crop followed by corn and oats. On the loessial soils oats for pasture and grain and soybeans would be the dominant crops followed by pasture, cotton and corn,

The cropping pattern for future with project conditions is based on projected prices and drained land yields and costs, assuming the cropping pattern would largely be determined by the net return of the various crops. Under these conditions, oats for grain and grazing, and soybeans and pasture would be the dominant crop on all alluvial soils followed by corn and cotton. On the loessial soils oats for pasture and grain, and pasture would be the dominant crop followed by corn, soybeans and cotton.

#### YIELDS

Yield tables were developed for each of the three problem areas. These tables are by soil units for each crop and are estimates of yields being attained or expected to be attained by average producers without drainage, with drainage, and with drainage and irrigation. Yields were weighted in proportion to the percentage of land undrained, drained, and drained and irrigated. All yield estimates are for flood-free conditions - yields that would be obtained without damage from flooding.

Woodland yields are based on sampling studies conducted in the area by the U. S. Forest Service. Yields are based on average growth rates applicable to the species, stand sizes and ages found. These yields represent the units of wood products and value that will be attained on the average for the next fifty years under the level of management that can be expected to prevail based on present findings in the area. Board and cubic foot yields are computed in the working papers but for simplicity are shown in Table III as a present worth value per acre.

## IRRIGATION

For all practical purposes supplemental irrigation is used in the Ouachita-Lafourche area, and not in the other three projects of the Red River Backwater Area. In the Ouachita-Lafourche Area, 6,629 in the A zone, 450 acres in the B-1 zone and 20 acres in the B-2 zone are being irrigated at the present time. Based on using 12 acre-inches of water for row crops, the amount of water used annually amounts to about 7,100 acre-feet. This entire water supply comes from the Ouachita River, which maintains a minimum channel depth of six feet for navigation purposes.

For future with project conditions, the amount of irrigation in the A zone would increase to about 8,885 acres, an increase of 2,156 acres over that presently being irrigated. This need can easily be met by using surface supplies of the Ouachita River.

In the B-1 zone, the future with project condition, shows an increase in irrigated land from 450 acres to about 1,240 acres, an increase of 790 acres. In the B-2 zone the increase is from 20 acres irrigated to 173 acres, an increase of 153 acres.

Total future with project requirements would be about 10,298 acre-feet of irrigation water per year, compared with present use of 7,100 acre feet per year.

It is estimated that at least 90 percent, or 9,258 acre-feet of irrigation water would come from the Ouachita River, and the remainder would come from ground water sources. From all available data on surface and ground water supply, these irrigation requirements can easily be met.

Costs of installing and maintaining irrigation systems have been put on an annual basis, and have been included as overhead costs in the cost of production. The actual cost of irrigating the land annually - labor, gasoline, oil, etc. has been included in the cost of production as a pre-harvest cost.

## PRICES

Projected field crop and livestock prices used in this report were developed jointly by the Agricultural Research Service and Agricultural Marketing Service. Projected prices have been used, based on most likely long-range expectations, and estimates of cropping patterns have been influenced by the assumption that such prices will prevail. Projected prices were developed from studies on the prospective conditions of product supplies and requirements. In order to remove the effects of price support programs and in order to reflect the economy of production in competing areas, the projections assume the eventual attainment of a relatively free market for agricultural products.

In evaluating the long-run aspects of deferred land development and improvement projects, the use of the projected prices

makes it unnecessary to restrict the acreage of "control" crops in crop income computations.

Crop acreages shown for future conditions are not compatible with a projection of 1955 prices into the future, however. Neither do they seem to portray attainable goals for restricted crops during the surplus disposal period in the immediate years ahead. Therefore, if current prices were to be used in projection of future project conditions, or for projects where early construction is contemplated, there would appear to be little or no justification for increasing the acreage of surplus or "control" crops over 1955 allotment acreages.

Forest product unit values are based on average 1955 prices, f.o.b. mill yard or railroad siding. These prices are considered to be a realistic price projection for future conditions. All values obtained from the application of 1955 prices have been discounted to present worth on all increments in production and value due to application of high level management and for any time lag in availability of products for harvest.

#### CROP PRODUCTION COSTS

Production costs for all field crop and livestock enterprises were developed from a study of large and small Mississippi River bottomland farms. Since production costs by enterprises are not the same for large farms as for small, these costs were weighted in accordance with the proportionate acreage of large and small farms expected to exist in the project area under future conditions. Production costs, as used for project evaluation purposes, include all operational costs required to attain yield levels indicated in project cost tables (such as allowances for labor, power, machinery, materials and services required to produce and market the product), all farm overhead costs necessary in farm operation (except a charge for land), and an allowance for management expense which includes an estimated amount required for the operator's management and for any employed management personnel.

Land charges were omitted from the cost analysis because net returns to land were being determined for conditions with and without the project. Overhead charges (which include such items as a charge for buildings, upkeep of operational machinery, interest on investment, and insurance) and management charges were allocated to enterprises in proportion to the specified costs of production expended on each crop. Some production costs have been treated as variables with yield levels attained (most harvest costs, fertilizer usage, poisoning, etc.) while other costs have been assumed to be fixed regardless of yield (such as soil preparation, cultivation, and machine-picking cost). Preharvest, harvest, overhead and management costs have been computed separately to derive total crop production costs.

Production costs used for projections are approximately 96 percent of the 1955 level of costs incurred by farmers.

It should be noted that yield-production cost relationships are not the same summary tables (all soils) as for individual soils tables. A small portion of this difference is statistical in nature, and other differences are due to the weighting effect of summaries where both yields and production costs are weighted in proportion to the total acreage and total cost in each soil unit.

Where supplemental irrigation costs are involved, such costs were added to standard cost tables to determine total production costs. These costs consist of preharvest and overhead charges. They have already been added to the costs shown in all project tables in proportion to acres irrigated (supplemental irrigation only).

Production costs for forest products are based on costs prevailing in and adjacent to the locality during 1955. These costs are estimated to be at a reasonable level for projection to future conditions. Costs cover conversion of standing timber to raw wood products at mill or rail siding, including a return to management; a cultural and crop management cost consisting of an amortized annual charge for timber stand improvement work; an allowance for management and supervision by owners, their representatives and foresters; and forest protection costs. Conversion costs per acre have been discounted to present worth in the same manner as production values.

#### NET CROP PRODUCTION RETURNS

The analysis of crop production by soil units, upon which the summary tables are based, generally indicate the gross value of production to be greater than production costs. However, production costs of a few crops on some of the soil units are higher than gross value of the crop. A correction has been made in the summary tables to remove the effect of these negative net returns where they occur. In making the correction, the actual returns for the negative net returns were assumed to be zero. In the long-run, shifts in land use may be expected that would largely avoid the losses incurred with the cropping system shown. By indicating a net income of zero for crops having a negative net return, the net error involved is negligible, and well within the limits of error in basic information used in project area analysis. Higher yields, as expected, show larger net returns to land than lower yields for the same enterprise.

The basic principle involved in this analysis is that project justification should not be dependent upon negative values and, therefore, that the total net returns shown for future project conditions places a ceiling on project benefits. Inasmuch as this analysis assumes flood-free yields consideration has not been given to the effect of flood damage on average annual net income.

## LAND USE CONVERSIONS AND COSTS

Tables VI show the conversions that are anticipated from the influence of the various projects and the development of the associated group and farm drainage systems. Tables VI also show the cost of making these conversions at present prices. A rather large number of acres are expected to be converted from woodland to cultivated crops and pasture with the provision of major drainage outlets and associated group and farm drainage systems.

It is estimated that these conversions will all be profitable enough to be desirable from the standpoint of the owner and operator. If the operator secures the inducement of a reasonable income over and above his loss of present woodland value and his land use conversion and drainage costs, he will probably go ahead with land conversions rather than wait for a long period of years for deferred woodland income.

Items of conversion costs include all expense of putting land from its present state into condition to produce a crop or live-stock enterprise, with only normal production costs remaining to be incurred.

All capital costs of conversion have been amortized at 5 percent for a period of 50 years. Except for pasture maintenance, included as an annual conversion cost for "new" pasture acreage and improved pasture acreage, all other maintenance is included as part of crop production costs. In the case of the Tensas Coccodrie Pumping Plant project pasture costs and pasture maintenance were included as part of crop production costs.

## FARM DRAINAGE SYSTEM AND COSTS

Table VII contains estimates of amounts and costs of farm drainage systems that can be expected after the major outlets have been satisfactorily improved. Approximately 10 percent of the wet land has been taken out for farmsteads, roads, waste, etc., and thus is not available for crop use. An estimated 65 percent of the remaining wet land is to be drained for crop production with the project. The balance or 25 percent has been drained, or will be drained without the project, or will not be improved because of lack of farmer participation.

Cost estimates were based on all ditching and structural needs for systems to serve an average of one square mile. Computed at 1955 levels, they include the installation (construction, engineering, and contingency) costs required for farm drainage systems for satisfactory removal of surface water accumulations that are likely to occur for the various conditions of rainfall and run-off involved. Requirements vary by soil mapping units and by land use. Estimates are based on standard design data for conditions involved.

Farm drainage system capital costs have been amortized for a useful life period of 10 years at 5 percent for all projects.

Field experience in farm drainage work indicates that a 10 year life period is realistic in view of changing ownership, and changes in cropping patterns.

Annual maintenance costs of farm drainage systems, varying with soil mapping units and land use, have been added to the annual equivalent of installation costs to derive the total annual costs of farm drainage.

#### GROUP DRAINAGE SYSTEMS AND COSTS

The Louisiana Department of Public Works has provided a large portion of the Red River Backwater area with parish-wide system of group intermediate drainage ditches using the major streams as outlets. These ditches did not always provide adequate drainage for the entire drainage area of the parish. For instance, in Concordia Parish, the present system of public works ditches provides drainage for only 60 percent of the parish. The remaining 40 percent was mostly in a sump area that did not require drainage at the time of construction.

Investigations indicated that existing Department of Public Works ditches and the existing natural drains would be adequate in the Ouachita-Lafourche and Below Sicily Island areas if the proposed Corps of Engineers borrow pit ditches were constructed. In the Bushley Creek area, and the Tensas-Cocodrie Pumping Plant area, however, the present system of Public Works ditches is not adequate to handle the additional farm drainage that might be expected to be installed as a result of the proposed project.

The Louisiana Department of Public Works furnished an estimate of the cost of intermediate ditches needed in the Bushley Creek area. These costs are shown in Table VIII for Bushley Creek.

In the Tensas-Cocodrie Pumping Plant area, the present 5-year frequency sump will be reduced from the present 45.0' elevation to the 39.5' elevation, m.s.l., bringing in some additional 56,000 acres of land that would require intermediate drainage outlets. The present system of public works ditches in Concordia Parish consists of 226.9 miles of ditches and was installed at a cost of \$553,765. The Parish of Concordia furnished 60 percent of the construction cost and the Louisiana Department of Public Works furnished 40 percent. It is estimated that some 21 additional miles of intermediate ditches will be needed to adequately serve the area being brought in production as a result of lowering the 5-year frequency sump. Estimates of costs are shown in Table VIII for the Tensas-Cocodrie Pumping Plant.

The installation costs of the new intermediate ditches and appurtenant works have been amortized over a 20-year period at  $3\frac{1}{2}$  percent interest to obtain an annual equivalent installation cost. Maintenance costs have been added to this amount to obtain the total annual cost of the needed intermediate ditches.

## BENEFITS AND ASSOCIATED COSTS

Table IX for each reach summarizes net annual returns for tables III and IV for zones A and B; annual costs of making land conversions; (from table VI); and annual costs for establishing farm and group drainage systems (from tables VII and VIII).

Returns and gross benefits, and associated annual costs of land conversions and farm drainage systems in the Ouachita-Lafourche Ring Levee and the Sicily Island Loop Levee sub-project have been discounted at 5 percent in column 3, table IX to account for an estimated 10-year lag and build-up period to full installation and maintenance requirements, and benefits accrual. The ten year period of lag was selected because of the rapid rate at which farmers are presently taking advantage of existing drainage facilities. Consideration was also given to the rate at which technical assistance could be furnished farmers for installing farm drainage systems.

Returns and gross benefits, and associated annual costs of land conversions and farm drainage systems for the Tensas-Cocodrie Pumping Plant Area have been discounted at 5 percent in column 3, table IX to account for an estimated 20-year lag and build-up period to full installation and maintenance requirements and benefit accrual. Group drainage annual cost for the Tensas-Cocodrie Pumping Plant area were discounted at  $3\frac{1}{2}$  percent for a 20-year lag period. The 20-year period of lag was selected to allow for some change in ownership and additional time due to the large amount of conversion.

Group drainage and annual cost for the Bushley Creek Levee Area were discounted at  $3\frac{1}{2}$  percent to account for an estimated 10-year lag in installation. There would be an additional 10-year lag for full installation, maintenance, and benefit accrual for farm drainage systems in this reach. Therefore all farm drainage and conversion annual costs and benefits were discounted for a 20-year period at 5 percent in table IX.

## DETERMINATION OF DEGREE OF DEVELOPMENT DUE TO THE PROPOSED PROJECT

For the purpose of this study, it was considered that the authorized project for the Mississippi River west bank levee and the Tensas-Cocodrie Backwater protection levee were completed. The Old River closure structure will be operated so as not to materially change the frequency or height of backwater as now experienced; and for the Tensas-Cocodrie area study, it was assumed that the protected area has received its maximum development. Each area was studied independently.

In the Ouachita-Lafourche area, the Bushley Creek area, and the Sicily Island area all authorized work was considered complete and assumed to be fully effective. Only those portions of the A, B-1 and B-2 zones whose development was dependent on the proposed project were considered. Therefore, all net benefits resulting were attributed to the proposed project.

In the Tensas-Cocodrie Pumping Plant sub-project, the upper limit of effectiveness is the upper limit of the B-1 zone, therefore, none of the A zone was considered. The B-1 zone was considered primarily independent of the proposed project but required the facilities and impetus of the proposed project for full development to take place. Therefore, 20 percent of the net benefits of the B-1 zone were attributed to the proposed project. All the B-2 zone benefits were attributed to the proposed project.

SUMMARY TABLE

Reaches	Gross Benefits	Gross Benefits	Associated Costs	Net Benefits Due to Project	Percent Net Benefits Due to Project	Amount of Benefits Due to Project
Ouachita Lafourche Ring Levee	333,391	264,296	91,395	172,901	100%	172,901
Bushley Creek Levee Area	144,021	89,476	42,231	47,245	100%	47,245
Sicily Island Loop Levee	482,944	382,854	96,649	286,205	100%	286,205
Tensas Cocodrie Pumping Plant						
Zone B-1	467,636	290,528	80,061	210,467	20%	
Zone B-2	939,932	583,952	176,560	407,392	100%	449,485 1/
Total Red River Backwater Area	2,367,924	1,611,106	486,896	1,124,210		955,836

19a.

1/ Consists of 20% of the net benefits of the B-1 zone plus 100% of net benefits of B-2 Zone.



Basin: Red River Backwater Area

Reach: 1

Project: Ouachita (Lafourche  
Ring Levee)

State: Louisiana

TABLE I

## PRESENT LAND USE

Zone	Soil map- ping unit	Open (Acres)	Wooded (Acres)	Urban (Acres)	Total (Acres)
Zone A	1 1/	2,759	5,688	-	8,447
	la	1,193	4,826	-	6,019
	1U 1/	38	64	-	102
	2	926	75	-	1,001
	5 2/	9,801	113	-	9,914
	5U 2/	19	-	-	19
	9SU	553	125	-	678
	10	2,336	1,647	-	3,983
	10U	248	331	-	579
	10SU	360	175	-	535
	11	9,044	13	-	9,057
	Subtotal-all soils	27,277	13,057	-	40,334
	Urban	-	-	0	0
	Total Zone A	27,277	13,057	0	40,334
Zone B 1	1 1/	2,457	2,775	-	5,232
	la	1,478	5,536	-	6,014
	2	791	274	-	1,065
	5 2/	5,466	1,105	-	6,571
	5U 2/	356	591	-	947
	9SU	281	25	-	306
	10	1,262	213	-	1,475
	10SU	44	25	-	69
	11	954	-	-	954
	Subtotal-all soils	12,089	10,544	-	22,633
	Urban	-	-	0	0
	Total Zone B 1	12,089	10,544	0	22,633
Zone B 2	1 1/	527	4,654	-	5,181
	la	442	21,528	-	21,970
	1U 1/	-	159	-	159
	2	301	1,217	-	1,518
	5 2/	861	1,037	-	1,898
	5U 2/	51	172	-	223
	9SU	88	44	-	132
	10	573	181	-	754
	10U	70	-	-	70

Basin: Red River Backwater Area  
 Reach: 1  
 Project: Ouachita (Lafourche  
Ring Levee)  
 State: Louisiana

TABLE I  
PRESENT LAND USE

Zone	Soil map- ping unit	Open (Acres)	Wooded (Acres)	Urban (Acres)	Total (Acres)
Zone B 2 (Con't.)					
	Subtotal-all soils	2,913	28,992	-	31,905
	Urban	-	-	0	0
	Total Zone B 2	2,913	28,992	0	31,905
Zone C	1 1/ 1a 2 5 2/ 5U 2/ 10 11	38 14 38 38 14 -	3,901 20,839 1,194 1,041 324 96 124	- - - - - - -	3,901 20,877 1,208 1,079 362 110 124
	Subtotal-all soils	142	27,519	-	27,661
	Urban	-	-	0	0
	Total Zone C	142	27,519	0	27,661
Reach Total-all soils		42,421	80,112	0	122,533
Urban		-	-	0	0
GRAND TOTAL - Project		42,421	80,112	0	122,533

- 1/ Soil unit 1 and 1U combined as 1 on Table 1 A and 1 B.  
 2/ Soil unit 5 and 5U combined as 5 on Table 1 A and 1 B.  
 3/ Zone A open land includes 246 acres of water.  
 4/ Zone G woodland includes 500 acres of water.

Basin: Red River Backwater Area  
 Project: Ouachita Lafourche  
 Ring Levee  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE II A  
(Zone for Drainage Calculations Only)

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres 3/	(4)		(6) Total
			(4) Unit	(5) Production per acre	
All	Open Land 5/ Crops: Cotton Corn Soybeans Oats(Grain) Oats(Sup.Past.) Soybeans(Fol- lowing Oats) Perm. Pasture Idle Other 2/ Woodland	12,716 11,444 3,340 1,460 585 1,182 (580) 1,182 (120) 4,462 415 1,272 13,057	lbs. bu. bu. bu. lbs.beef bu. lbs.beef	293 26 17 29 177 13 174	978,950 38,150 10,120 34,678 102,400 1,560 776,960
	TOTAL 1/	25,773			

- 1/ Total does not include 10,041 acres already drained, and 4,520 acres not needing drainage.
- 2/ Farmsteads, farm roads, waste and non-agricultural.
- 3/ Parenthetical amounts are duplicated acreages.
- 4/ Calculated from columns 3 and 6; rounded to nearest unit.
- 5/ 246 acres of water included in open land.

Basin: Red River Backwater Area

Project: Ouachita (Lafourche Reach).

Ring Levee)

State: Louisiana

(Zone for Drainage Calculations Only)  
COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS, AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based on projected prices)

Total does not include 10,041 acres already drained; 8,530 acres expected to be drained; future without project, 2,525 acres open land not expected to participate in drainage program; 6,862 acres to remain in woodland, and 4,520 acres not needing drainage.

Total does not include 10,041 acres already drained out project, 2,525 acres open land not expected to in woodland, and 4,520 acres not needing drainage.

Adjusted to eliminate negative net returns of \$231.

For more details, see [farm roads](#), [waste](#) and [non-agricultural](#).

Rains began, rain clouds were seen over the ocean.

**Parenthetical amounts are duplicated acreages.**

estimated from columns 3 and 6: rounded to nearest

Call 800-222-1222 or visit [www.holidayinn.com](http://www.holidayinn.com).

Calculated from columns 3 and 10; rounded to nearest

Basin: Red River Backwater Area

Reach: 1

Project: Ouachita (LaFourche

Ring Levee)

State: Louisiana

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (Based on Projected prices)

SUMMARY - TABLE IV A

(Zone for Drainage Calculations Only)

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres 3/	(4) Unit Per acre	(5) Production Total	(6) Per unit Dollars	(7) Value (8) of production Total	(9) Cost (10) of production Total	(11) Net return Dollars
All	Open Land	7,856	4/					
	Crops	7,071	lbs.	382	19,100	•30445	5,815	106.44
	Cotton	50	bu.	42	41,260	1.50	61,890	40.51
	Corn	975	bu.	22	18,325	2.50	45,813	27.22
	Soybeans	835	bu.	38	69,450	•95	65,978	26.16
	Oats (Grain)	1,810	lbs. beef	196	240,550	0.184	44,261	18.04
	Oats (Sup. Pas.)	(1,225)						
	Soybeans (Follow- owing Oats)	(465)	bu.	18	8,215	2.50	20,538	11,178
	Perm. Pasture	3,327	lbs. beef	245	0.184		149,766	9,360
	Idle	74						72,519
	Other	2/						
	Woodland	785						
	TOTAL	7,856				394,061	226,516	167,545

1/ Total does not include 10,041 acres already drained, 8,530 acres expected to be drained; future without project, 2,525 acre open land not expected to participate in drainage program, 6,862 acres to remain in woodland, and 4,520 acres not needing dra image.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 3 and 6; rounded to nearest unit.

5/ Calculated from columns 3 and 10; rounded to nearest cent.

Basin: Red River Backwater Area

Project: Ouachita Lafourche

Ring Levee

Reach: 1

State: Louisiana

SUMMARY - TABLE II B-1  
(Zone for Drainage and Flood Control Calculations)  
COMPUTATION OF AGRICULTURAL PRODUCTION

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres	(4)	(5) Production		(6) Total
			Unit	Per acre		
All	Open Land	12,089			4/	
	Crops	10,880				
	Cotton	1,775	lbs.	333	590,400	
	Corn	1,335	bu.	31	41,080	
	Soybeans	645	bu.	19	12,070	
	Oats (Grain)	1,421	bu.	32	45,280	
	Oats (Sup.Pas) 3/	(265)	lbs.beef	149	39,550	
	Soybeans (Follow- ing oats)	(115)	bu.	11	1,210	
	Perm. Pasture	5,293	lbs.beef	192	1,015,500	
	Idle	411				
	Other 2/	1,209				
	Woodland	9,176				
	TOTAL 1/	21,265				

1/ Does not include 1,368 acres dedicated woodland.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 3 and 6; rounded to nearest unit.

Basin: Red River Backwater Area

Project: Ouachita Lafourche

Reach: 1

State: Louisiana

SUMMARY - TABLE III B-1

(Zone for Drainage and Flood Control Calculations)  
COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based on projected prices)

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres	(4) Production Unit	(5) Production Per acre	(6) Total	(7) Value of production	(8) Cost of production	(9) Net Return	(10) Dollars	(11) Dollars
ALL	Open Land	13,571	5/	Dollars	Total	Dollars	Dollars	Dollars	Dollars	Dollars
Crops: <u>7/ 8/</u>										
Cotton	1,481	lbs.	506	749,240	304,45	228,106	132,55	196,312	32,558	2/
Corn	1,434	bush.	38	54,430	1,50	81,645	33,75	48,393	33,252	
Soybeans	872	bush.	23	19,828	2,50	49,570	27,50	23,981	25,589	
Oats(Grain)	1,692	bush.	38	65,044	0,95	61,792	26,20	44,327	17,465	
Oats(Sup•Past.)	(715)	lbs•beef	218	155,800	0,184	28,668	20,56	44,703	13,965	
Soybeans(Fol-										
lowing Oats)	(230)	bush.	21	4,850	2,50	12,125	26,50	6,096	6,029	
Perm. Pasture	6,343	lbs•beef	227	1,437,160	0,184	264,439	22,13	134,007	130,432	
Idle	390									
Other <u>3/</u>	1,359									
Woodland	2,920									
TOTAL	16,491									

1/ Total does not include 4,774 acres to remain in woodland; 1,368 acres dedicated woodland.

2/ Adjusted to eliminate negative net returns of \$764 for cotton.

3/ Farmsteads, farm roads, waste and non-agricultural.

4/ Parenthetical amounts are duplicated acreages.

5/ Calculated from columns 3 and 6; rounded to nearest unit.

6/ Calculated from columns 3 and 10; rounded to nearest cent.

7/ DRAINED: Cotton 67%; Corn 60%; Soybeans 62%; Oats (gr.) 62%;

Oats (Sup•Past.) 69%; Soybeans (Fol. Oats) 64%; Perm. Pasture 56%.

8/ IRRIGATED(Drained): Cotton 18%; Corn 5%.

## Basin: Red River Backwater Area

Project: Ouachita Lafourche  
Ring Levee  
Reach: 1  
State: Louisiana

SUMMARY - TABLE IV B-1  
(Zone for Drainage and Flood Control Calculations)  
COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (Based on projected prices)

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres	(4)	(5) Production	(6)	(7) Value of production	(8) Cost of production	(9) Cost of production	(10)	(11) Net Return
All	Open Land	37	Unit	Per Acre	Total	Per Unit	Dollars	Dollars	Total	Dollars
CROPS:	6/ 7/									
Cotton	16,491 1,285 2,035 2,455 4,095 (2,907)	lbs. bu. bu. bu. lbs.beef	14	613 47 22 42 220	787,300 95,110 55,125 172,330 639,580	•30445 1.50 2.50 •95 0.184	239,694 112,665 137,813 163,714 117,683	159.09 42.28 27.51 28.04 20.92	204,435 86,034 67,529 114,827 60,828	35,259 56,631 70,284 48,887 56,855
Soybeans										
Oats(Grain)										
Oats(Sup.Past.)										
Loving Oats	(1,140)	bu.			21	24,010	2.50	60,026	26.36	30,047
Perm.Pasture	4,934	lbs.beef			258	1,275,408	0.184	234,677	24.27	119,763
Idle	38									
Other 2/	1,649	0								
WOODLAND	TOTAL 1/									
		16,491								
						1,096,272		683,463		412,809

1/ Total does not include 4,774 acres to remain in woodland and 1,368 acres dedicated woodland.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 3 and 6; rounded to nearest unit.

5/ calculated from columns 3 and 10; rounded to nearest cent.

DRAINED: Cotton 42%; Corn 61%; Soybeans 85%; Oats (gr.) 89%;

Oats(Sup.Past.) 89%; Soybeans(Fol.Oats) 89%; Perm. Pasture 88%.

6/ IRRIGATED (Drained): Cotton 53%; Corn 27%.

Basin: Red River Backwater Area  
 Project: Ouachita Lafourche  
 Ring Levee  
 Reach: 1  
 State: Louisiana

**SUMMARY - TABLE II B-2**  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres	(4)		(6) Total
			(4) Unit	(5) Production Per acre	
All	Open Land	2,913		4/	
	Crops	2,622			
	Cotton	244	lbs.	269	65,560
	Corn	355	bushels	22	7,980
	Soybeans	60	bushels	21	1,230
	Oats (Grain)	454	bushels	24	11,054
	Oats (Sup.Pas) 3/	(32)	lbs.beef	211	6,750
	Perm. Pasture	1,391	lbs.beef	176	244,370
	Idle	118			
	Other 2/	291			
	Woodland	22,656			
	TOTAL	25,569			

1/ Does not include 6,336 acres dedicated woodland.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 3 and 6; rounded to nearest unit.

Basin: Red River Backwater Area  
 Project: Ouachita Lafourche  
 Ring Levee  
 Reach: I  
 State: Louisiana

SUMMARY - TABLE III B-2  
 (Zone for Drainage and Flood Control Calculations)

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
 AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based on projected prices)

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres <u><u>3/</u></u>	(4) Production Unit	(5) Per acre	(6) Total	(7) Value of production	(8) Per unit	(9) Cost of production	(10) Per acre	(11) Net Return
						Dollars	Dollars	Dollars	Total	Dollars
All	Open Land	3,469								
CROPS: <u>7/</u> <u>8/</u>	Cotton	3,123	lbs.	4/	260	68,950	20,993	82,38	21,831	803 6/
	Corn	401	bu.		25	10,146	15,219	26,09	10,463	4,896 5/
	Soybeans	110	bu.		21	2,300	5,750	26,87	2,956	2,794
	Oats (Grain)	435	bu.		27	11,946	11,349	20,64	8,979	2,370
	Oats (Sup. Past.)	(171)	lbs. beef		165	28,150	5,179	15,50	2,650	2,529
Soybeans Fol-										
Lowing Oats		(50)	bu.		630	1,575	19,64	982	593	
Perm. Pasture		1,792	lbs. beef	175	313,220	0.184	57,633	16.52	29,599	28,034
Idle		120								
Other <u>2/</u>		346								
WOODLAND		2,315								
TOTAL <u>1/</u>		5,784				5.14	11,898	3.52	8,147	3,751
							129,596		85,607	45,770 6/

1/ Total does not include 19,785 acres to remain in woodland and 6,336 acres dedicated woodland.

2/ Farmsteads, farm roads, was te and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 3 and 6; rounded to nearest unit.

5/ Calculated from columns 3 and 10; rounded to nearest cent.

6/ Adjusted to eliminate negative net returns of \$1,641 for cotton and \$1140 for corn.

7/ DRAINED: Cotton 5%; Corn 4%; Soybeans 11%; Oats (gr.) 6%; Oats (Sup. Past.) 6%; Soybeans (following oats) 6%; Permanent Pasture 15%.

8/ IRRIGATED (Drained): Cotton 3%; Corn 2%.

Basin: Red River Backwater Area  
 Project: Ouachita Lafourche  
 Ring Levee  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE IV-B-2  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
 AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (Based on projected prices)

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres	(4) Production Unit	(5) Production Per Acre	(6) Total	(7) Value of production	(8) Cost of production	(9) Cost of production	(10) Net Return
						Per Unit	Total	Per Acre	Total
						Dollars	Dollars	Dollars	Dollars
All	Open Land	5,784	1/						
	CROPS 6/ 7/	5,205	lbs.	508	83,900	•30445	25,543	135.87	3,125
	Cotton	165	bu.	37	25,330	1.50	37,995	35.09	13,956
	Corn	685	bu.	18	22,240	2.50	55,600	23.92	25,820
	Soybeans	1,245	bu.	31	61,110	•95	58,055	22.34	13,748
	Oats (Grain)	1,983	lbs.beef	175	242,116	0.184	44,550	16.46	21,747
	Oats(Sup.Past.)	(1,385)							
	Soybeans Fol-	(525)	lbs.	15	7,975	2.50	19,938	21.74	8,525
	Lowering Oats	1,107	lbs.beef	222	245,835	0.184	45,233	20.99	22,000
	Perm. Pasture	20							
	Idle	579							
	Other 2/	0							
	WOODLAND	TOTAL 1/							
		5,784							
V	Total does not include 19,785 acres to remain in woodland; and 6,336 acres dedicated woodland.					286,914		177,993	108,921

Total Acres D-2 31,905 acres.

Farmsteads, farm roads, waste and non-agricultural.

Parenthetical amounts are duplicated acreages.

Calculated from columns 3 and 6; rounded to nearest unit.

Calculated from columns 3 and 10; rounded to nearest unit.

DRAINED: cotton 45%; Corn 40%; Soybeans 50%; Oats (gr.) 50%; Oats (Sup.Past.) 53%;

Soybeans (Fol. oats) 54%; Permanent Pasture 58%.

IRRIGATED (Drained): Cotton 32%; Corn 17%.

Basin: Red River Backwater Area  
 Project: Ouachita Lafourche  
Ring Levee  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE II C  
 (Zone of No Project Benefit)  
 COMPUTATION OF AGRICULTURAL PRODUCTION: EXISTING CONDITIONS

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres	(4)		(6) Total
			Unit	(5) Production (Per acre)	
All	Open Land	142		3/	
	Crops	128			
	Cotton	15	lbs.	290	4,350
	Corn	20	bu.	31	620
	Soybeans	5	bu.	18	90
	Oats (Grain)	35	bu.	27	960
	Oats (Sup.Pas)	2/ (18)	lbs.beef	178	3,200
	Perm.Pasture	46	lbs.beef	147	6,780
	Idle	7			
	Other	1/			
	Woodland	27,519			
	TOTAL	27,661			

1/ Farmsteads, farm roads, waste and non-agricultural.

2/ Parenthetical amounts are duplicated acreages.

3/ Calculated from columns 3 and 6; rounded to nearest unit.

4/ Woodland includes 500 acres of water.

Basin: Red River Backwater Area  
 Project: Ouachita Lafourche  
 Ring Levee  
 Reach: I  
 State: Louisiana

**SUMMARY - TABLE III C & IV  
 (Zone of No Project Benefit)**  
**COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
 AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT** (Based on projected prices)

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres	(4) Production Per Acre	(5) Value of production	(6) Cost of production	(7) Value of production	(8) Cost of production	(9) Cost of production	(10) Net Return
			Unit	Total	Per Unit	Total	Per Acre	Total	Dollars
All	Open Land	202							
	CROPS:								
	Cotton	5	lbs.	320	1,600	51	29.66	458	29
	Com	4	bu.	32	128	1.50	192	29.50	74
	Soybeans	25	bu.	18	450	2.50	1,125	24.52	512
	Oats(Grain)	55	bu.	34	1,860	.95	1,767	23.85	455
	Oats(Sup.Past.)	(30)	lbs.beef	200	6,000	0.184	1,104	19.33	524
	Perm.Pasture	93	lbs.beef	163	15,160	0.184	2,789	15.33	1,363
	Idle	0							
	Other	20							
	WOODLAND	6							
	TOTAL	202							

1/ Total does not include 27,459 acres of woodland, as no conversion and/or benefits are expected.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 3 and 6; rounded to nearest unit.

5/ Calculated from columns 3 and 10; rounded to nearest cent.

6/ Woodland includes 500 acres of water.

TABLE V

SUMMARY BY SOIL MAPPING UNITS

Basin: Red River Backwater Area  
 Project: Ouachita Lafourche Ring Levee  
 Reach: 1  
 State: Louisiana

Soil Unit	Acres	Future without project		Future with project		Difference in net value
		(Value of production in dollars) Gross	Cost	(Value of production in dollars) Gross	Cost	
		Net 1/	Net 1/			
1	4,203	62,955	37,440	220,403	125,875	94,528
1a	1,204	13,196	8,146	50,812	28,151	22,661
2	322	10,923	6,783	22,525	13,045	9,480
10	1,727	21,645	4,145	48,822	32,962	24,403
10U	400	6,682	8,559	18,537	10,623	5,699
Subtotal	2/	7,856	115,701	70,103	46,093	394,061
						226,516
						167,545
						121,452
1	5,461	113,418	45,526	274,124	157,363	116,761
1a	3,173	40,871	23,620	107,638	65,753	41,885
2	1,807	58,073	39,420	18,653	116,405	45,369
5	7,689	461,334	288,461	172,873	623,274	389,785
5U	742	20,885	13,956	6,929	44,388	26,590
9SU	421	17,876	11,362	6,814	23,426	13,415
10	2,035	40,283	27,604	14,696	73,345	47,990
10SU	65	2,710	1,737	973	3,114	1,836
10U	70	1,885	1,348	569	2,901	1,766
11	1,014	121,080	92,616	28,464	122,035	90,429
Subtotal	2/	22,477	878,415	568,212	312,748	1,390,650
TOTAL	2/	30,333	994,116	638,315	358,841	1,784,711
						865,963
						524,687
						211,939
						692,232
						333,391

TABLE V  
SUMMARY BY SOIL MAPPING UNITS

Basin: Red River Backwater Area  
Project: Ouachita Lafourche Ring Levee  
Reach: 1  
State: Louisiana

1/ Adjusted for negative net returns of \$495 in table III A.  
Adjusted for negative net returns of \$764 in table III B-1 and \$1,781 in table III B-2.

2/ Does not include 10,041 acres already drained; 8,530 acres expected to be drained, future without project; 1,554 acres open land and 971 acres of converted woodland not expected to participate in drainage program and 6,862 acres to remain in woodland and 4,520 acres not needing drainage. Total acres Zone A - 40,334.

Does not include 4,774 acres to remain in woodland and 1,368 acres dedicated to woodland in Zone B-1.  
Total acres Zone B-1 - 22,633.

Does not include 19,785 acres to remain in woodland and 6,336 acres dedicated woodland in Zone B-2.  
Total acres Zone B-2 - 31,905.

Does not include 27,459 acres of woodland in Zone C. Total Zone C - 27,661.

TABLE VI  
LAND CONVERSION COSTS WITH PROJECT

Basin: Red River Backwater Area  
 Project: Ouachita Lafourche  
 Ring Levee  
 Reach: I  
 State: Louisiana

Type of Conversion	Total Area	Cost of Clearing	Cost of Smoothing	Cost of Pasture Establishment	Total Cost
Woods to Other Land	912	54,720	0	0	54,720
Woods to General Cultivation	6,881	412,860	13,762	0	426,622
Woods to Pasture	1,318	79,080	0	36,904	115,984
Pasture to General Cultivation	2,397	0	0	4,794	4,794
General Cultivation to Pasture	5	0	0	140	140
Pasture to Improved Pasture	8,045	0	0	40,225	40,225
TOTAL FOR REACH				642,485	642,485
Annual Amortized Value (.05478)				35,195	35,195
Annual Maintenance of Converted Pasture				12,899	12,899
Annual Maintenance of Improved Pasture				15,688	15,688
				<u>28,587</u>	<u>28,587</u>

TABLE VII  
ANALYSIS OF FARM DRAINAGE SYSTEM COSTS

Basin: Red River Backwater Area  
 Project: Ouachita Lafourche  
 ,Reach: Ring Levee  
 State: 1-Summary  
 Louisiana

Zone A, B-1, & B-2		Construction Cost Per acre	Engineering cost	Contingency	Total Cost	Annual Equiva- lent Installation Cost 1/	Annual Main- tenance Cost	Total Annual Cost
Soil Unit & Land Use	Area	Acres	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
1 & 1a-Cropland Pasture	5,109 4,127	15.18 8.34	77,555 34,419	15,511 6,884	7,756 3,442	100,822 44,745	13,056 5,794	11,633 1,033
2 -Cropland Pasture	1,056 314	13.08 8.34	13,812 2,619	2,762 524	1,381 262	17,955 3,405	2,325 441	2,072 79
5 & 5U-Cropland Pasture	963 450	11.56 7.29	11,132 3,281	2,226 656	1,113 328	14,471 4,265	1,874 552	4,397 520
9SU -Cropland Pasture	59 17	11.43 8.73	674 148	135 30	67 15	876 193	113 25	1,670 98
10 -Cropland Pasture	1,723 768	15.03 7.92	25,897 6,083	5,179 1,217	2,590 608	33,666 7,908	4,260 1,024	3,884 183
10U -Cropland Pasture	211 184	13.03 8.53	2,749 1,570	550 314	275 157	3,574 2,041	463. 264	412 47
TOTAL	14,981	179,939	35,988	17,994	233,921	30,291	21,216	51,507
1/ Amortized at 5% for 10 year period (0.12950)								

Basin: Red River Backwater Area  
 Project: Ouachita Lafourche  
 Ring Levee  
 Reach: 1  
 State: Louisiana

TABLE IX  
 SUMMARY OF ANNUAL NET PRODUCTION RETURNS AND ASSOCIATED COSTS

(1) Item	(2) Total <u>Dollars</u>	(3) Discounted amount <u>Dollars</u>
1. Net return with project	689,275	
2. Net return without project	355,884	
3. Gross Benefit to project	333,391	264,296
4. Farm Drainage Cost		
a. Installation Cost	30,291	
b. Maintenance Cost	21,216	
c. Total Cost	51,507	40,832
5. Group Drainage Cost		
a. Installation Cost	0	
b. Maintenance Cost	0	
c. Total Cost	0	0
6. Conversion Cost		
a. Installation Cost	35,195	
b. Maintenance Cost	28,587	
c. Total Cost	63,782	50,563

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: 1  
 State: Louisiana

TABLE I  
PRESENT LAND USE

Page 1 of 2

Zone	Soil mapping unit	Open (Acres)	Wooded (Acres)	Total (Acres)
Zone A	8	262	108	370
Subtotal all soils		262	108	370
Zone B-1	1	236	441	677
	1a	89	2,300	2,389
	5	2,833	361	3,194
	8	287	96	383
	8f	122	1,626	1,748
	9	2,788	317	3,105
	10	1,511	5,560	7,071
	10s	19	-	19
	10u	365	205	570
Subtotal all soils		8,250	10,906	19,156
Zone B-2	1	35	462	497
	1a	14	624	638
	2	50	7	57
	5	576	376	952
	8	57	485	542
	8f	-	334	334
	9	511	142	653
	10	865	2,516	3,381
	10u	142	113	255
	11	29	-	29
Subtotal all soils		2,279	5,059	7,338

BASIN: Red River Backwater area  
 PROJECT: Bushley Creek Area  
 REACH: 1  
 STATE: Louisiana

TABLE I (CON'TD)  
 PRESENT LAND USE

Page 2 of 2

Zone	Soil unit	Open	Wooded	Miscell-	Total
		Acres	Acres	aneous Acres	Acres
Zone C	1	13	242	-	255
	1a	47	20,539	-	20,586
	2	34	81	-	115
	5	54	217	-	271
	8 3/	-	7	-	7
	8f3/	156	5,042	-	5,198
	10	101	722	-	823
Subtotal		405	26,850	-	27,255
Water		-	-	850	850
Total Zone C		405	26,850	850	28,105
REACH TOTAL-ALL SOILS		11,196	42,923	850	54,969

1/ Soil unit 8 and 8f combined as 8 in zone B-1.

2/ Soil unit 10s and 10u combined as 10u in zone B-1

3/ Soil unit 8 and 8f combined as 8 in zone C.

BASIN: Red River Backwater Area  
 PROJECT: Bushley Creek Area  
 REACH: 1  
 STATE: Louisiana

SUMMARY-TABLE IIIA  
 (ZONE FOR DRAINAGE CALCULATIONS ONLY)  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1) Land Use and Crop Distribution	(2) Acres	(3) Unit	(4) Production per acre. <u>3/</u>	(5) Total
	<u>1/</u>			
Open land	262			
Crops	236			
Cotton	40	lbs.	100	4,000
Corn	30	bush.	10	300
Soybeans	40	bush.	8	320
Oats(grain)	35	bush.	20	700
Oats (sup. past.)	(10)	lbs. beef	100	1,000
Perm. Pasture	86	lbs. beef	120	10,320
Idle	5			
Other <u>2/</u>	26			
Woodland	<u>108</u>			
TOTAL	370			

1/ Parenthetical amounts are duplicated acreages.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Calculated from columns 2 and 5; rounded to the nearest unit.

BASIN: Red River Backwater Area

PROJECT: Bushley Creek Area

REACH: I

STATE: Louisiana

SUMMARY - TABLE IIIA  
(ZONE FOR DRAINAGE CALCULATIONS ONLY)

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION,  
PRODUCTION COSTS, AND NET RETURNS: FUTURE CONDITIONS WITHOUT  
PROJECT (Based on projected prices)

(1) Land use and crop distribution	(2) Acres	(3) Production Unit	(4) per acre	(5) Total	Value of production Per unit	(6) Total	(7) Per acre	(8) Cost(9) of production	(10) Net Return
Open Land	0								
Crops									
Cotton		lbs.			lint+seed				
Corn		bu.			•30445				
Soybeans		bu.			1.50				
Oats (gr.)		bu.			2.50				
Oats (sup.Past)		lbs. beef			•95				
Perm. Pasture		lbs. beef			•184				
Idle					.184				
Other									
Woodland	0								

TOTAL 1/<sub>0</sub> Does 1/<sub>0</sub> not include 315 acres expected to be drained, future without project; 26 acres open land not expected to participate in drainage program and 29 acres to remain in woodland.

BASTIN: Red River Backwater Area

PROJECT: Bushley Creek Area

REACH: 1

STATE: Louisiana

LAND USE AND CROP DISTRIBUTION

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION

PRODUCTION COSTS, AND NET RETURNS: FUTURE CONDITIONS

WITH PROJECT (Based on projected prices).

(2)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Land use and crop distribution	Acres	UNIT	Production PER ACRE	TOTAL	OF PRODUCTION Per unit	Cost of production Total	Per Acre	Total	Net Return DOLLARS
Open land	0								
Crops									
Cotton		lbs.				lint+seed			
Corn		bu.				•30445			
Soybeans		bu.				1.50			
Oats (fr.)		bu.				2.50			
Oats (sup. past.)		lbs. beef				•95			
Perm. Pasture		lbs. beef				.184			
Idle						.184			
Other									
Woodland	0								
TOTAL	1/			0					

1/ Does not include 315 acres expected to be drained, future without project; 26 acres open land not expected to participate in drainage program and 29 acres to remain in woodland.

BASIN: Red River Backwater Area  
 PROJECT: Bushley Creek Area  
 REACH: 1  
 STATE: Louisiana

SUMMARY - TABLE IIB  
 (ZONE FOR DRAINAGE AND FLOOD CONTROL CALCULATIONS)  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1)	(2)	(3)	(4)	(5)
Land use and crop distribution	Acres	Production Unit	per acre	Total
	3/			
Open land	8,250		4/	
Crops	7,425			
Cotton	1,460	lbs.	265	387,350
Corn	1,420	bu.	23	31,960
Soybeans	1,415	bu.	17	24,595
Oats (gr.)	810	bu.	32	25,840
Oats (sup, past.)	(285)	lbs. beef	185	52,850
Perm. Pasture	2,123	lbs. beef	179	380,730
Idle	197			
Other 2/	825			
Woodland	10,734			
TOTAL 1/	18,984			

1/ Total does not include 172 acres of dedicated woodland.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to nearest unit.

Basin: Red River Backwater Area

Project: Bushley Creek Area

Reach: 1

State: Louisiana

SUMMARY - TABLE III B-1  
(Zone for Drainage and Flood Control Calculations)  
COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION,  
PRODUCTION COSTS, AND NET RETURN: FUTURE CONDITIONS WITHOUT PROJECT (Based on  
projected prices)

(1) Land use and crop distribution	(2) Acres	(3) Unit Production	(4) Per Acre	(5) Total	(6) Value of production	(7) Cost of production	(8) Value of production	(9) Cost of production	(10) Net Return
					Dollars	Dollars	Dollars	Dollars	Dollars
Open Land	10,130								
Crops:									
Cotton	9,117	610 lbs. Lint	429	261,650	•30445	79,659	114.70	69,970	10,112 2/
Corn	655 bu.			25,070	1.50	37,605	33.05	21,651	15,954
Soybeans	2,775 bu.			22	2.50	154,563	27.03	75,002	79,561
Oats (Grain)	2,710 bu.			35	.95	90,821	24.60	66,673	24,193 2/
Oats (Sup. Past.)	(1,285) lbs. beef			205	264,000	0.184	48,576	19.33	23,736
Soybeans Fol-									
Lowing Oats	(420) bu.			17	6,990	2.50	17,475	23.26	9,770 2/
Perm. Pasture	2,129 lbs. beef	252		536,820	0.184	98,775	23.45	49,924	48,851 2/
Idle	238								
Other 3/	1,013								
Woodland	3,179								
TOTAL	1/			13,309					
					545,530	328,225	217,862		

1/ Total does not include 5,675 acres to remain in woodland & 172 acres dedicated woodland.

2/ Adjusted to eliminate negative net return of \$557.

3/ Farmsteads, farm roads, waste and non-agricultural.

4/ Parenthetical amounts are duplicated acreages.

5/ Calculated from columns 2 & 5; rounded to the nearest unit.

6/ Calculated from columns 2 and 9; rounded to the nearest cent.

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE IV B-1  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION  
 COSTS, AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (Based on  
 projected prices)

(1) Land use and crop Distribution	(2) Acres	(3) Unit	(4) Production Per Acre	(5) Total Per Unit	(6) Value of production Dollars	(7) Cost of production Dollars	(8) Value of production Dollars	(9) Cost of production Dollars	(10) Net return Dollars
Open Land									
Crops:									
Cotton	11,978	525 lbs.lint	430	225,500	3045	68,654	114.51	60,118	8,583 2/
Corn	2,015	bu.	35	70,770	1.50	106,155	31.27	63,001	43,154
Soybeans	2,675	bu.	22	58,600	2.50	146,500	26.94	72,059	74,441
Oats(Grain)	3,975	bu.	39	153,700	.95	116,015	26.31	104,585	41,430
Oats(Sup•Past.)	(3,040)	lbs.beef	219	667,100	0.184	122,746	20.90	63,550	59,196
Soybeans Fol-									
lowing Oats	(1,025)	bu.	16	16,650	2.50	41,625	22.67	23,232	18,393
Perm.Pasture	2,741	lbs.beef	255	699,900	0.184	128,781	24.04	65,898	62,883
Idle	47								
Other	3/								
Woodland	0								
TOTAL	1/								
	13,309								
					760,476	452,443	308,080		

1/ Total does not include 5,675 acres to remain in woodland, and does not include 172 acres of dedicated woodland.

2/ Adjusted to eliminate negative net return of \$47.

3/ Farmsteads, farm roads, waste and non-agricultural.

4/ Parenthetical amounts are duplicated acreages.

5/ Calculated from columns 2 & 5; rounded to nearest unit.

6/ Calculated from columns 2 & 9; rounded to nearest cent.

BASIN: Red River Backwater Area  
 PROJECT: Bushley Creek Area  
 REACH: 1  
 STATE: Louisiana

SUMMARY - TABLE IIB  
 (ZONE FOR DRAINAGE AND FLOOD CONTROL CALCULATIONS)  
 COMPUTATIONS OF AGRICULTURAL PRODUCTION

(1)	(2)	(3)	(4)	(5)
Land use and crop distribution	Acres	Unit	Production Per acre	Total
	3/			4/
Open land	2,279			
Crops	2,051			
Cotton	469	lbs.	256	120,170
Corn	305	buc.	19	5,930
Soybeans	332	buc.	15	486
Oats (gr.)	390	buc.	26	10,140
Oats (sup. past.)	(130)	lbs. beef	161	20,900
Soybeans following oats	(20)	buc.	13	260
Perm. Pasture	497	lbs. beef	157	78,190
Idle	58			
Other 2/	228			
Woodland	4,887			
TOTAL 1/	7,166			

1/ Total does not include 172 acres dedicated woodland.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to nearest unit.

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: I  
 State: Louisiana

SUMMARY - TABLE III B-2  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION  
 COSTS, AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based on  
 projected prices)

(1) Land use and crop distribution	(2) Acres	(3) Unit	(4) Production Per acre	(5) Total	(6) Value of production Per unit	(7) Cost of production Per Acre	(8) Value of production Total	(9) Net return Dollars	(10) Net return Dollars
					Dollars	Dollars	Dollars	Dollars	
<b>Open Land</b>									
Crops:									
Cotton	2,526	lbs.lint	247	44,100	•30445	13,518	81.16	14,609	768.2/
Corn	2,273	bu.	22	5,920	1.50	8,385	23.77	6,061	2,324
Soybeans	255	bu.	16	8,183	2.50	20,458	22.94	11,493	8,965
Oats(Grain)	501	bu.	31	18,090	.95	17,186	22.26	13,132	4,054
Oats(Sup.Past.)	590	lb.beef	183	43,900	0.184	8,078	17.35	4,164	3,914
Soybeans Fol-	(240)	lb.beef							
lowing Oats	(40)	bu.	16	620	2.50	1,550	22.25	890	660
Perm. Pasture	614	lbs.beef	165	101,120	0.184	18,606	15.44	9,480	9,126
Idle	133								
Other	253								
Woodland	1,422								
<b>TOTAL</b>	<b>1/</b>								
	3,948								

1/ Total does not include 3,218 acres to remain in woodland and 172 acres of dedicated woodland.  
 2/ Adjusted to eliminate negative net returns of \$1,859.  
 3/ Farmsteads, farm roads, waste and non-agricultural.  
 4/ Parenthetical amounts are duplicated acreages.  
 5/ Calculated from columns 2 & 5; rounded to nearest unit.  
 6/ Calculated from columns 2 & 9; rounded to nearest cent.

## Basin: Red River Backwater Area

Project: Bushley Creek Area

Beach:

MEAD.

State: Louisiana

SUMMARY - TABLE IV B-2

(Zone for Drainage and Flood Control Calculations)

Reach: 1

**State:** Louisiana      **COSTS AND NET RETURNS:** FUTURE CONDITIONS WITH PROJECT (Based on projected prices)

29.

BASIN: Red River Backwater Area  
PROJECT: Bushley Creek Area  
REACH: 1  
STATE: Louisiana

SUMMARY - TABLE IIC  
(Zone of No Project Benefit)  
COMPUTATION OF AGRICULTURAL PRODUCTION: EXISTING CONDITIONS

(1)	(2)	(3)	(4)	(5)
Land use and crop distribution	Acres	Unit	Production per acre	Total
Open land	405		4/	
Crops	365			
Cotton	20	lbs.	265	5,300
Corn	30	bu.	17	520
Soybeans	35	bu.	15	520
Oats	51	bu.	24	1,206
Oats (sup. past.)	(10)	lbs. beef	100	1,000
Perm. Pasture	223	lbs. beef	123	27,520
Idle	6			
Other 2/	40			
Woodland	0			
TOTAL 1/	405			

1/ Does not include 26,850 acres of woodland.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to the nearest unit.

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: I  
 State: Louisiana

SUMMARY - TABLE III C & IV C  
 (Zone of No Project Benefit)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS, AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based on projected prices)

(1) Land use and crop distribution	(2) Acres	(3) Unit	(4) Production Per acre	(5) Total	(6) Value of production Per unit	(7) Dollars	(8) Cost of production Per Acre	(9) Total	(10) Net Return
Open Land	405								
Crops:									
Soybeans	365	bu.	20	200	2.50	500	26.30	263	237
Oats (Grain)	20	bu.	36	720	.95	684	24.95	499	185
Oats (Sup. Past.)	(10)	lbs. beef	200	2,000	0.184	368	19.40	194	174
Perm. Pasture	319	lbs. beef	131	41,780	0.184	7,687	11.92	3,803	3,883
Idle	16								
Other	40								
Woodland	0								
TOTAL	405								

1/ Total does not include 26,850 acres of woodland.  
 2/ Farmsteads, farm roads, waste and non-agricultural.  
 3/ Parenthetical amounts are duplicated acreages.  
 4/ Calculated from columns 2 & 5; rounded to nearest unit.  
 5/ Calculated from columns 2 & 9; rounded to nearest cent.

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: 1  
 State: Louisiana

SUMMARY BY SOIL MAPPING UNITS  
 TABLE V

Soil Unit	Acres	Future without project		Future with project <sup>1/</sup>		Difference in Net Value
		Gross	Cost	Gross	Cost	
No Zone A Benefits						
Zones B-1, B-2 & C (Subject to flooding)						
1	785	14,861	8,788	6,073	42,363	17,358
1a	434	4,583	2,634	1,994	16,752	9,850
2	87	3,018	1,679	1,339	3,751	2,038
5	3,966	248,333	143,597	104,736	301,165	175,806
8	1,764	56,849	32,497	24,352	79,543	48,346
8f	34	193	111	82	1,686	986
9	3,624	213,006	132,027	80,979	235,006	137,823
10	6,223	88,100	62,299	28,172	270,001	97,183
10U	716	19,025	11,578	7,447	37,562	102,649
11	29	2,659	2,253	406	1,950	22,123
Total	<sup>3/</sup> 3	17,662	650,627	397,463	255,580	989,779
						590,225
						399,601
						144,021

<sup>1/</sup> Includes Zone C which is assumed to be the same as future conditions without project.

<sup>2/</sup> Adjusted to eliminate negative net returns.

<sup>3/</sup> Total area of Zone B-1 reduced by 5,675 acres to remain in woodland and 172 acres of dedicated woodland. Total Zone B-1 19,156. Total area of Zone B-2 reduced by 3,218 acres to remain in woodland and 172 acres of dedicated woodland. Total Zone B-2 7,338 acres. Total area of Zone C reduced by 26,850 acres of woodland. Total Zone C 27,255 acres.

TABLE VI  
LAND CONVERSION COSTS WITH PROJECT

BASIN: Red River Backwater area  
PROJECT: Bushley Creek Area  
REACH: 1  
STATE: Louisiana

Type of Conversion	Total Area	Cost of Clearing	Cost of Smoothing	Cost of Pasture Establishment	Total Cost
	ACRES	DOLLARS	DOLLARS	DOLLARS	DOLLARS
Woods to other land	460	27,600	-	-	27,600
Woods to general crops	2,982	178,920	5,964	-	184,884
Woods to pasture	1,159	69,540	2,318	33,032	104,890
Pasture to general crops	753	-	1,506	-	1,506
General crops to pasture	142	-	284	4,047	4,331
Pasture to improved pasture	1,993	-	-	4,484	4,484
TOTAL FOR REACH		<u>327,695</u>	<u>33*</u>		
Annual amortized value (.05478)		17,951			
Annual Maintenance of converted pasture	1,301				
Annual Maintenance of improved pasture	1,993			14,639	

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: 1  
 State: Louisiana

ANALYSIS OF FARM DRAINAGE SYSTEM COSTS

Zone A, B-1 & B-2		Construction Cost			Engineering Cost			Total			Annual			Annual			Total		
Soil Unit and Land Use		Area		Per Acre		Total		Engineering Cost		Agency Cost		Total		Equivalent Cost		Maintenance		Annual Cost	
		Acres	Dollars	Dollars	Dollars	Total	Dollars	Dollars	Dollars	Dollars	Total	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars		
1,1a - Cropland	Pasture	682	15.18	10,353	2,071	1,035	13,459	1,743	1,553	3,296	3,296	124							
2 - Cropland	Pasture	27	13.08	353	71	35	459	59	53	112	112	10							
5,11 - Cropland	Pasture	160	7.29	1,166	233	117	1,516	196	35	1,542	1,542	231							
8,8f - Cropland	Pasture	123	15.03	2,901	580	290	3,771	488	435	923	923	80							
9 - Cropland	Pasture	358	13.03	4,665	933	167	6,065	785	700	1,485	1,485	29							
10 - Cropland	Pasture	1,057	7.92	8,371	1,674	837	10,882	1,409	251	1,660	1,660								
10u - Cropland	Pasture	379	13.03	4,938	988	494	6,420	831	741	1,572	1,572	163							
	Total	6,618		86,201	17,242	8,620	112,063	14,509	11,541	26,050									

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1/ Amortized at 5% for 10 year period.

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: 1  
 State: Louisiana

TABLE VIII  
 ANALYSIS OF GROUP DRAINAGE NEED AND COSTS

Item	Unit	Amount	Unit Cost	Total Cost
			Dollars	Dollars
Excavation	a/Cu.Yd.	119,024	0.21	24,995
Shaping or Spreading Spoil	b/Cu.Yd.	167,767	0.15	25,165
Clearing Right-of-Way	1/			
Right-of-way easements	Miles	7.3	20.00	146
Crossings	Each	5	200.00	1,000
Grade Control Structures				
Water Gates	Each	6	40.00	240
Vegetative Plantings	Acres	32	13.00	416
Total Construction Cost				51,962
Engineering Cost				5,196
Contingencies & Legal				5,196
Total Installation Cost				62,354
Annual Equivalent - Installation Cost (Amortized for 20 years at $3\frac{1}{2}$ percent)				4,387
Annual Maintenance Cost				2,598
Total Annual Cost of required Group Facilities				6,985

- a/ Interior Drainage - Bushley Bayou to Sandy Lake. From: La. Dept. of Public Works
- b/ Intermediate group drainage.
- 1/ These items included in excavation costs under normal contract procedure.

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: 1  
 State: Louisiana

TABLE IX  
 SUMMARY OF ANNUAL NET PRODUCTION RETURNS  
 AND ASSOCIATED COSTS

(1) Item	(2) Total <u>Dollars</u>	(3) Discounted Amount <u>Dollars</u>
1. Net return with project	395,121	
2. Net return without project	251,100	
3. Gross benefit to project	144,021	89,476
4. Farm drainage cost		
a. Installation Cost	14,509	
b. Maintenance Cost	11,541	
c. Total Cost	26,050	16,184
5. Group drainage cost		
a. Installation Cost	4,387	
b. Maintenance Cost	2,598	
c. Total Cost	6,985	5,800
6. Conversion Cost		
a. Installation Cost	17,951	
b. Maintenance Cost	14,639	
c. Total Cost	32,590	20,247

TABLE I  
PRESENT LAND USE

Basin: Red River Backwater Area  
Project: Sicily Island Loop Levee  
Reach: 1  
State: Louisiana

Page 1 of 2

Zone	Unit	Soil Mapping		Total Acres
		Open Acres	Wooded Acres	
Zone A	1 BO	1/ 553	346	899
	1u BO	1/ 30	0	30
	2 BO	1,335	0	1,335
	2u BO	2/ 110	0	110
	2su BO	2/ 215	0	215
	5 BO	3/ 85	0	85
	5u BO	3/ 30	0	30
	5su BO	3/ 30	0	30
	9s LT	18	0	18
	1 BOA	43	0	43
Subtotal - all soils		2,743	346	3,089
	Water			-
Urban				-
	Zone Total	2,743	346	3,089
Zone B-1	1 BO	632	10,578	11,210
	1a BOA	296	4,750	5,046
	1u BO	111	871	982
	2 BO	591	240	831
	2u BO	86	245	331
	2su BO	891	227	1,118
	5 BO	4/ 73	0	73
	5u BO	4/ 397	275	672
	5su BO	4/ 295	0	295
	8 LT	49	269	318
	9s LT	252	350	602
	11 BOA	345	31	376
	1 BOA	252	160	412
	2 BOA	163	221	384
	5 BOA	2,075	99	2,174
Subtotal - all soils		6,508	18,316	24,824
Water				-
	Urban			-
Total - Zone B-1		6,508	18,316	24,824
Zone B-2	1 BO	6	5,407	5,413
	1a BOA	160	7,306	7,466
	1u BO	5/ 172	344	516
	2 BO	5/ 18	0	18
	2su BO	62	196	258
	8 LT	0	61	61
	11 BOA	6/ 49	0	49
	1 BOA	142	243	385

TABLE I  
PRESENT LAND USE

Basin: Ped River Backwater Area  
Project: Sicily Island Loop Levee  
Reach: 1  
State: Louisiana

Page 2 of 2

Zone	Soil Mapping Unit	Open		Total Acres
		Acres	Acres	
Zone B-2	2 BOA	55	228	283
	5 BOA	6/ 97	98	195
Subtotal - all soils		761	13,883	14,644
Water				-
Urban				-
Total - Zone B-2		761	13,883	14,644
Zone C	1 BO	0	1,705	1,705
	1a BOA	110	27,654	27,764
	1u BO	0	1,145	1,145
	2su BO	0	48	48
	8 LT	0	517	517
	11 BOA	7/ 49	31	80
	1 BOA	178	37	215
	2 BOA	0	148	148
	5 BOA	7/ 349	0	349
	Subtotal - all soils		31,285	31,971
Water				1,605
Urban				-
Total - Zone C		686	31,285	33,576
Project Total		10,698	63,830	74,528
Water				1,605
Urban				-
GRAND TOTAL		10,698	63,830	76,133

- 1/ Soil Units 1 and 1u BO combined as 1.
- 2/ Soil Units 2u and 2su BO combined as 2u.
- 3/ Soil Units 5; 5u and 5su BO combined as 5.
- 4/ Soil Units 5, 5u and 5su BO combined as 5.
- 5/ Soil Units 1u and 2 combined as 1u.
- 6/ Soil Units 11 BOA and 5 BOA combined as 5.
- 7/ Soil Units 11 BOA and 5 BOA combined as 5.

BASIN: Red River Backwater Area  
 PROJECT: Tensas Cocodrie Area  
 REACH: 1  
 STATE: Louisiana

SUMMARY - TABLE II A  
 (Zone for Drainage Calculations Only)  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1) Land use and crop distribution	(2) Acres <u>3/</u>	(3) Unit	(4) Production Per Acre	(5) Total <u>4/</u>
Open Land	2,394			
Crops:	2,155			
Cotton	310	lbs. lint	338	104,750
Corn	305	bu.	29	8,860
Soybeans	410	bu.	18	7,480
Oats (Grain)	480	bu.	30	14,560
Oats (Sup. Past.)	(140)	lbs. beef	135	18,900
Soybeans fol- lowing oats	(40)	bud.	15	600
Perm. Pasture	596	lbs. beef	195	116,120
Idle	54			
Other <u>2/</u>	239			
Woodland	346			
TOTAL <u>1/</u>	2,740			

1/ Total does not include 349 acres already drained.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to the nearest unit.

## Basin: Red River Backwater Area

## Project: Sicily Island Loop Levee

Reach: 1

**State:** Louisiana

SUMMARY - TABLE III M

(Zone for Drainage Calculations Only)

PRODUCTION, PRODUCTION COSTS AND NET

## PROJECT (Based on projected prices)

Total does not include 288 acres already drained; 612 acres expected to be drained future without project; 174 acres open land not expected to participate in drainage program; 33 acres to remain in woodland. Total does not include 18 acres in soil unit 9s and 43 acres in soil unit 1 BOA already drained from which no table III A and IV A were needed

**2/** claimed 101, which no table III A and IV A was necessary.  
**Farmsteads, farmroads, waste and non-agricultural.**

3/ Parenthetical amounts are duplicated acreages.

Calculated from columns 2 and 5; rounded to the nearest unit.  
Calculated from columns 2 and 9; rounded to the nearest cent.

## BASIN: Red River Backwater Area

PROJECT: Sicily Island Loop Levee

REACH: I

STATE: Louisiana

SUMMARY - TABLE IV A  
(ZONE FOR DRAINAGE CALCULATIONS ONLY)

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION  
AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (BASED ON PROJECTED PRICES)

Land use and crop distribution	Acres	Unit	Production Per acre <sup>1/</sup>	Total	Value of production Per unit	Production Total	Cost of production Per Acre <sup>5/</sup>	Total	Net Return	Per Acre <sup>5/</sup> Total
		3/			DOLLARS	DOLLARS	DOLLARS	DOLLARS	DOLLARS	DOLLARS
Open land										
Crops	1,921									
Cotton	1,729	45	lbs.	541	24,350	30445	7,413	137.78	6,200	1,213
Corn	310	bu.		55	17,180	1.50	25,770	41.89	12,987	12,783
Soybeans	630	bu.		37	23,360	2.50	58,400	37.18	23,422	34,978
Oats (gr.)	510	bu.		61	31,360	.95	29,792	36.40	18,562	11,230
Oats (Sup. Past.)										
Soybeans Following oats	(400)	(150)	lbs. beef	253	101,200	.184	18,620	23.87	9,546	9,074
Perm. Pasture			bu.	24	3,540	2.50	8,850	28.31	4,246	4,604
Idle			lbs. beef	367	85,780	.184	15,784	32.60	7,629	8,155
Other <sup>2/</sup>	0	192								
Woodland	0									
TOTAL <sup>1/</sup>	1,921				164,629		82,592	82,037		

<sup>1/</sup> Total does not include 288 acres already drained, 612 acres expected to be drained future without project, 17 $\frac{1}{4}$  acres open land not expected to participate in drainage program, 33 acres to remain in woodland. Total does not include 18 acres in soil unit 9s, 43 acres in soil unit 1 BOA already drained for which no Table IIIA and IVa was needed.

<sup>2/</sup> Farmsteads, farm roads, waste and non-agricultural.

<sup>3/</sup> Parenthetical amounts are duplicated acreages.

<sup>4/</sup> Calculated from columns 2 and 5; rounded to the nearest unit.

<sup>5/</sup> Calculated from columns 2 and 9; rounded to the nearest cent.

BASIN: Red River Backwater Area  
 PROJECT: Sicily Island Loop Levee  
 REACH: 1  
 STATE: Louisiana

SUMMARY-TABLE IIB-1  
 (ZONE FOR DRAINAGE AND FLOOD CONTROL CALCULATIONS)  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1) Land use and crop distribution	(2) Acres <u>3/</u>	(3)	(4) Production Unit	(5) Per acre <u>4 / Total</u>
Open land	6,508			
Crops	5,859			
Cotton	1,002	lbs.	389	390,110
Corn	600	bu.	35	20,860
Soybeans	1,439	bu.	23	33,655
Oats (gr.)	1,140	bu.	38	43,120
Oats (Sup. past.)	(330)	lbs. beef	191	62,900
Soybeans following oats	(90)	bu.	19	1,720
Perm. Pasture	1,620	lbs. beef	202	327,110
Idle	58			
Other <u>2/</u>	649			
Woodland	16,014			
<u>TOTAL 1/</u>	<u>22,522</u>			

1/ Total does not include 2,302 acres dedicated woodland.

2/ Farms, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to nearest unit.

BASIN: Red River Backwater Area  
 PROJECT: Sicily Island Loop Levee  
 REACH: 1  
 STATE: Louisiana

SUMMARY - TABLE IIIB-1  
 (ZONE FOR DRAINAGE AND FLOOD CONTROL CALCULATIONS)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION,  
 PRODUCTION COSTS AND NET RETURNS: FUTURE CONDITIONS WITHOUT  
 PROJECT (BASED ON PROJECTED PRICES)

Land use and crop distribution	Acres 3/	Production Unit per acre4/	Value (7) of production Total	Cost (9) of Production			Net Return (10) per acre5/ Total
				Per unit	Total	DOLLARS	
Open land	7,556						
Crops	6,799						
Cotton	560	lbs.	486	272,400	.30445 seed	82,932	125.63
Corn	1,280	bu.	43	55,200	1.50	82,800	35.59
Soybeans	1,870	bu.	26	49,110	2.50	122,775	30.11
Oats (gr.)	1,378	bu.	43	59,544	.95	56,567	28.23
Oats (Sup. past.)	(790)	lbs. beef	219	171,150	.184	31,491	20.01
Soybeans Following							
Oats	(215)	bu.	20	4,385	2.50	10,963	26.05
Farm.. Pasture	1,697	lbs. beef	218	370,590	.184	68,189	20.50
Idle	14						
Other	6/						
Woodland	757						
TOTAL 1/	8,427						
	15,983						
				7.02	59,156	4.46	37,077 22,079
					514,873		304,382 210,578

1/ Total does not include 6,539 acres to remain in woodland; 2,302 acres dedicated woodland.

2/ Adjusted to eliminate negative net returns of 87 dollars.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to nearest unit.

5/ Calculated from columns 2 and 9; rounded to nearest cent.

6/ Farmsteads, farm roads, waste and non-agricultural.

Basin: Red River Backwater Area

Project: Sicily Island Loop Levee

Reach: 1

State: Louisiana

SUMMARY - TABLE IV B-1  
(Zone for Drainage and Flood Control Calculations)  
COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION  
COSTS, AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (Based on  
projected prices)

(1) Land Use and Crop Distribution	(2) Acres	(3) Unit	(4) Production Per Acre	(5) Total	(6) Value (7) of production	(8) Cost (9) of production	(10) Net Return
					Dollars	Dollars	Dollars
Open Land	15,983						
Crops:					Lint+Seed		
Cotton	14,383	Lbs.Lint	477	374,350	113,972	123.70	97,105
Corn	2,370	Bu.	45	107,340	161,010	36.76	87,123
Soybeans	5,965	Bu.	29	174,310	435,850	32.11	191,555
Oats(Grain)	2,948	Bu.	50	116,944	139,597	31.64	93,261
Oats(Sup.Past.)	(2,363)	Lbs.Beef	224	528,570	0.184	97,256	21.17
Soybeans Fol.							50,023
Lowering Oats	(875)	Bu.	20	17,830	44,576	26.00	22,748
Perm.Pasture	2,293	Lbs.Beef	290	665,980	0.184	122,542	26.69
Idle	22						61,209
Other	2/						61,333
Woodland	0						
Total	1/				1,114,803	603,024	511,779

1/ Total does not include 2,302 acres dedicated land; 6,539 acres to remain in woodland.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to nearest unit.

5/ Calculated from columns 2 and 9; rounded to the nearest cent.

Basin: Red River Backwater Area  
 Project: Sicily Island Loop Levee  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE II B-2  
 Zone for Drainage and Flood Control Calculations  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1) Land Use and Crop Distribution	(2) Acres <u>3/</u>	(3)	(4) Production Unit	(5) Per Acre	Total
Open Land	761		<u>4/</u>		
Crops:	684				
Cotton	56	Lbs. Lint	321	17,980	
Corn	65	Bu.	34	2,200	
Soybeans	105	Bu.	20	2,085	
Oats(Grain)	55	Bu.	30	1,670	
Oats(Sup.Past)	(30)	Lbs. Beef	150	4,500	
Perm. Pasture	394	Lbs. Beef	226	88,970	
Idle	9				
Other <u>2/</u>	77				
Woodland	9,269				
Total <u>1/</u>	10,030				

- 1/ Total does not include 4,553 acres of dedicated land and  
 Soil Unit 8 LT consist of only 61 acres of dedicated land  
 for which no Table II B-2 was needed.
- 2/ Farmstead, farm roads, waste and non-agricultural.
- 3/ Parenthetical amounts are duplicated acreages.
- 4/ Calculated from columns 2 and 5; rounded to nearest unit.

Basin: Red River Backwater Area

Project: Sicily Island Loop Levee

Reach: I

State: Louisiana

SUMMARY - TABLE III B-2

(Zone for Drainage and Flood Control Calculations)

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based on projected prices)

(1) Land Use and Crop Distribution	(2) Acres 3/	(3) Unit Per Acre	(4) Production Lb./	(5) Total	(6) Value of production Dollars	(7) Cost of production Dollars	(8) Value of production Per Unit Total	(9) Cost of production Per Acre Total	(10) Net Return Dollars
Open Land	866								
Crops:	779								
Cotton	10	lbs.lint	370	3,700	•30445	1,126	102.10	1,021	.105
Com	95	bu.	34	3,210	1.50	4,815	30.52	2,899	1,916
Soybeans	190	bu.	22	4,095	2.50	10,238	27.15	5,158	5,080
Oats(Grain)	190	bu.	36	6,800	.95	6,460	24.86	4,724	1,736
Oats(Sup.Past.)	(135)	lbs.beef	164	22,100	0.184	4,066	15.45	2,086	1,980
Soybeans Fol-									
Flowing Oats	(10)	bu.	18	180	2.50	450	24.50	245	205
Perm.Pasture	292	lbs.beef	222	64,710	0.184	11,907	21.12	6,167	5,740
Idle.	2								
Other 2/	87								
Woodland									
Total 1/	4,391				36,268		21,251	15,017	
	5,257				75,330		43,551	31,779	

1/ Total does not include 4,773 acres to remain in woodland; and 4,614 acres dedicated woodland.

2/ Farmstead, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to the nearest unit.

5/ Calculated from columns 2 and 9; rounded to the nearest cent.

BASIN: Red River Backwater Area  
 PROJECT: Sicily Island Loop Levee  
 REACH: 1  
 STATE: Louisiana

SUMMARY - TABLE IV-B-2

(Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
 AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (Based on Projected Prices)

(1) Land Use and Crop Distribution	(2) Acres <u>3/</u>	(3) Unit	(4) Production Per Acre	(5) Total	(6) Value(7) of production	(8) Cost of production	(9) Return Per Acre Total	(10) Dollars
					Dollars	Dollars	Dollars	Dollars
Open Land	5,257	<u>4/</u>						
Crops:								
Cotton	4,731	lbs.lint	494	12,350	•30445	3,760	127.96	3,199
Corn	25	buc.	39	20,320	1.50	30,480	33.49	17,413
Soybeans	520	buc.	27	55,490	2.50	138,725	30.82	62,864
Oats(Grain)	2,040	buc.	47	63,740	.95	60,553	30.63	41,291
Oats(Sup.Past.)	1,343	lbs.beef	191	195,250	0.184	35,925	18.29	18,715
Soybeans Fol-	(1,023)							
Lowering Oats	(435)	buc.	16	7,020	2.50	17,550	22.76	9,902
Perm.Pasture	798	lbs.beef	273	217,580	0.184	40,034	25.25	20,151
Idle	0							
Other	2/							
Woodland	526	0						
Total	<u>4/</u>				327,027		173,535	153,492
	5,257							

1/ Total does not include 4,773 acres to remain in woodland; and 4,614 acres dedicated woodland.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to nearest unit.

5/ Calculated from columns 2 and 9; rounded to nearest cent.

Basin: Red River Backwater Area  
 Project: Sicily Island Loop Levee  
 Reach: I  
 State: Louisiana

SUMMARY - TABLE II C  
 (Zone of No Project Benefit)  
 COMPUTATION OF AGRICULTURAL PRODUCTION: EXISTING CONDITIONS

(1) Land Use and Crop Distribution	(2) Acres <u>2/</u>	(3) Unit	(4) Production Per Acre	(5) Total
Open Land	686			<u>3/</u>
Crops:	617			
Cotton	15	lbs. lint	320	4,800
Corn	20	bush.	32	640
Soybeans	120	bush.	20	2,400
Oats(Grain)	75	bush.	36	2,700
Oats(Sup.Past.)	(35)	lbs.beef	200	7,000
Perm.Pasture	387	lbs.beef	194	75,160
Idle	0			
Other 1/	69			
Woodland	31,285			
Total	31,971			

1/ Farmsteads, farm roads, waste and non-agricultural.

2/ Parenthetical amounts are duplicated acreages.

3/ Calculated from columns 2 and 5; rounded to nearest unit.

Basin: Red River Backwater Area  
 Project: Sicily Island Loop Levee  
 Reach: I  
 State: Louisiana

SUMMARY - TABLE III & TWC  
 (Zone of No Project Benefit)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION,  
 PRODUCTION COSTS, AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based  
 on projected prices)

(1) Land Use and Crop Distribution	(2) Acres <u>3</u>	(3) Production Per Acre	(4) Value of production Per Unit	(5) Cost of production Per Acre	(6) Value of production Total	(7) Cost of production Total	(8) Value of production Per Unit	(9) Cost of production Per Acre	(10) Net Return Dollars
Crops:									
Open Land	686								
Corn	617	b <u>u.</u>	32	1,280	1,50	1,920	29.50	1,180	740
Soybeans	40	b <u>u.</u>	20	2,000	2.50	5,000	26.30	2,630	2,370
Oats (Grain)	100	b <u>u.</u>	36	1,800	.95	1,710	24.95	1,248	462
Oats (Sup.Past.)	50	lbs.beef	200	5,000	0.184	920	19.35	484	436
Perm.Pasture	(25)	lbs.beef	197	83,960	0.184	15,449	18.92	8,078	7,371
Idle	0								
Other <sup>2/</sup>	69								
Woodland	0								
TOTAL <sup>1/</sup>	686								
					24,999	13,620	11,379		

1/ Total does not include 31,285 acres to remain in woodland, as no conversion and/or benefits are expected.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to the nearest unit.

5/ Calculated from columns 2 and 9; rounded to the nearest cent.

BASIN: Red River Backwater Area  
 PROJECT: Sicily Island Loop Levee  
 REACH: I  
 STATE: Louisiana

TABLE V  
 SUMMARY BY SOIL MAPPING UNITS

Soil Unit	Acres	Future Without Project		Future With Project		Difference in Net Value
		(Value of production in Dollars) Gross	(Value of Production in Dollars) Cost	Zone A Net 2/	Gross	
1 BO	780	16,162	10,080	57,521	29,627	27,894
2 BO	862	27,211	16,862	79,630	38,772	40,858
2uBO	279	14,238	8,662	5,576	27,478	13,285
Subtotal	1,921	57,611	35,604	22,007	164,629	82,592
<hr/>						
1 B	10,729	99,582	61,197	38,385	700,867	372,026
1uBO	861	15,329	8,809	6,520	51,080	26,309
2 BO	812	28,477	16,396	12,081	72,057	37,242
2uBO	290	8,249	5,046	3,203	24,955	13,317
2subBO	1,234	49,285	28,821	20,464	107,944	53,692
5BO	1,030	99,834	55,166	44,668	101,221	55,406
8LT	194	4,107	3,107	1,087	8,125	4,520
9sLT	537	26,978	14,679	12,299	33,587	18,950
1BOA	676	23,435	13,448	9,987	29,811	16,349
1aBOA	1,850	26,296	14,843	11,453	67,391	40,252
2 BOA	540	15,459	9,194	6,265	32,703	17,982
5 BOA	2,797	189,671	113,717	75,954	205,863	115,595
11BOA	376	28,500	17,130	11,370	31,225	18,539
Subtotal	21,926	615,202	361,553	253,736	1,466,829	790,179
Total 1/	23,847	672,813	397,157	275,743	1,631,458	872,771
						758,687
						482,944

BASIN:Red River Backwater Area  
PROJECT:Sicily Island Loop Levee  
REACH: 1  
STATE:Louisiana

TABLE V  
SUMMARY BY SOIL MAPPING UNITS  
(FOOTNOTES)

1/ Zone A - Total does not include 288 acres already drained; 612 acres expected to be drained, future without project; 174 acres open land not expected to participate in drainage program; 33 acres to remain in woodland; 18 acres in soil unit 9s and 43 acres in soil unit 1 BOA already drained for which no Table IIIA and IVA was needed.

Zones B-1 and B-2 - Total does not include 11,312 acres to remain in woodland; 6,855 acres of dedicated woodland and soil unit 8 LT consists of 61 acres of dedicated woodland for which no table IIIB-2 and IVB-2 were made.

Zone C - Total does not include 31,285 acres to remain in woodland, as no conversion and/or benefits are expected. Soil Units 1BO, 1uBO, 2suBO, 8 LT and 2 BOA had no open land, and since no conversion with or without project was anticipated no Table IIIC and IVC was made.

- 2/ Adjusted to eliminate negative net returns of \$87 in Table IIIB-1.
- 3/ Includes Zone C which is assumed to be the same as future conditions without project.

BASIN: Red River Backwater Area  
 PROJECT: Sicily Island Loop Levee  
 REACH: 1  
 STATE: Louisiana

TABLE VI  
 LAND CONVERSION COSTS WITH PROJECT

Zones A, B-1, & B-2

Type of Conversion	Total Area (Acres)	Cost of Clearing (Dollars)	Cost of Smoothing (Dollars)	Cost of Pasture Establishment (Dollars)	Total Cost (Dollars)
Woods to Other	1,307	78,420		78,420	
Woods to General Crops	9,875	592,500	19,750	612,250	
Woods to Pasture	1,900	114,000		161,500	
Pasture to General Crops	989		1,978	47,500	1,978
General Crops to Pasture	30			750	750
Pasture to Improved Pasture	1,395			<u>8,370</u>	<u>8,370</u>
Total for Reach			863,268		
Annual amortized value (.05478)		47,290			
Annual maintenance of pasture (new)	1,930		14,668		
Annual maintenance of Improved Pasture	1,395	<u>4,464</u>		<u>19,132</u>	

Basin: Red River Backwater Area  
 PROJECT: Sicily Island Loop Levee  
 REACH: 1  
 STATE: Louisiana

TABLE VII  
 ANALYSIS OF FARM DRAINAGE SYSTEM COSTS

Soil Unit and Land use		Construction Cost			Engineering Cost			Contingency Cost			Total Cost			Annual Equiv. Cost			Annual Maintenance Cost			Total Annual Cost		
Area	Per Acre	Acre	Dollars	Total	Dollars	Dollars	Dollars	Install.	Dollars	Install.	Dollars	Install.	Dollars	Cost	Dollars	Cost	Dollars	Cost	Dollars	Cost		
1, la-Cropland & 1u Pasture	8,198 1,817	15.18 8.34	124,446 15,154	24,889 3,031	12,445 1,515	161,780 19,700	20,951 2,551	1/	18,667 455	1/	39,618 3,006	1/	53.	1/	11,497 564	1/	55,494	1/	55,494	1/		
2, 2u & 2su Cropland Pasture	2,761 341	13.08 8.34	36,114 2,844	7,223 569	3,611 284	46,948 3,697	6,080 479	5,417 85	5,417 85	5,417 85	11,497 564	5,417 85	5,417 85	5,417 85	5,417 85	5,417 85	5,417 85	5,417 85	5,417 85	5,417 85		
5 Cropland Pasture	129 25	11.56 7.29	1,491 182	298 36	149 18	1,938 236	251 31	224 5	224 5	224 5	475 36	224 5	224 5	224 5	224 5	224 5	224 5	224 5	224 5	224 5		
8 Cropland Pasture	34 86	15.03 7.92	511 681	102 136	51 68	664 885	86 115	77 20	77 20	77 20	163 136	77 20	77 20	77 20	77 20	77 20	77 20	77 20	77 20	77 20		
Total.	13,391		181,423	36,284	18,141	235,848	30,544	24,950														

1/ Amortized at 5 percent for a 10 year period. (0.12950)

BASIN: Red River Backwater Area  
 PROJECT: Sicily Island Loop Levee  
 REACH: 1  
 STATE: Louisiana

TABLE IX  
 SUMMARY OF ANNUAL NET  
 PRODUCTION RETURNS AND ASSOCIATED COSTS

Item	Total	Discounted Amount <u>1/</u>
1. Net return with project	747,308	
2. Net return without project	264,364	
3. Gross benefit to project	482,944	382,854
4. Farm Drainage Cost		
a. Installation Cost	30,544	
b. Maintenance Cost	24,950	
c. Total Cost	55,494	43,993
5. Group Drainage Cost		
a. Installation Cost	0	
b. Maintenance Cost	0	
c. Total Cost	0	0
6. Conversion Cost		
a. Installation Cost	47,290	
b. Maintenance Cost	19,132	
c. Total Cost	66,422	52,656

1/ Discounted for a 10 year lag. (.79275)

Basin: Red River Backwater Area  
 Project: Tensas Cocodrie Area  
 Reach: 1  
 State: Louisiana

TABLE I  
PRESENT LAND USE

Zone	Soil mapping unit	Open (Acres)	Wooded (Acres)	Total (Acres)
Zone B-1	1	967	22,864	23,831
	lu	49	10,262	10,311
	2 <u>1/</u>	350	928	1,278
Subtotal - all soils		1,366	34,054	35,420
Water				-
Urban				-
Total Zone B-1		1,366	34,054	35,420
Zone B-2	1	1,574	45,220	46,794
	lu	12	23,752	23,764
	2 <u>1/</u>	356	1,295	1,651
Subtotal - all soils		1,942	70,267	72,209
Water				-
Urban				-
Total Zone B-2		1,942	70,267	72,209
Zone C	1	-	28,159	28,159
	lu	-	1,039	1,039
	2 <u>1/</u>	-	74	74
Subtotal - all soils		-	29,272	29,272
Water				5,400
Urban				-
Total Zone C		-	29,272	34,672
<b>TOTAL AREA</b>		<b>3,308</b>	<b>133,593</b>	<b>142,301</b>

1/ Soil unit 2, 2u, 5 and 11 combined as 2.

Basin: Red River Backwater Area  
 Project: Tensas Cocodrie Area  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE II B-1  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1) Land use and crop distribution	(2) Acres <u>2/</u>	(3) Unit	(4) Production Per Acre	(5) Total
Open Land	1,366			<u>4/</u>
Crops:	1,229			
Oats (Grain)	350	bu.	35	12,100
Oats (Sup. Past.)	(350)	lbs. beef	141	49,500
Perms. Pasture	879	lbs. beef	220	193,330
Idle	0			
Other <u>2/</u>	137			
Woodland	33,764			
<b>TOTAL</b>	<u>1/</u>	<b>35,130</b>		

1/ Total does not include 290 acres dedicated woodland.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to nearest unit.

Basin: Red River Backwater Area

Project: Tensas Cocodrie Area

Reach: 1

State: Louisiana

## SUMMARY - TABLE III B-1

(Zone for Drainage and Flood Control Calculations)

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS, AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based on projected prices)

(1) Land use and crop distribution	(2) Acres <u>3/</u>	(3) Production Unit	(4) Value (7) of production	(5) Cost (9) of production	(6) Net Return	(10) Dollars
		Per Acre	Total	Per Unit	Total	Dollars
				Dollars	Dollars	Dollars
Open Land	8,466					
Crops:	7,619					
Oats (Grain)	2,500	bu.	33	82,000	.95	77,900
Oats (Sup.Past.)	(2,500)	lbs.beef	129	322,000	0.184	59,248
Perm.Pasture	5,119	lbs.beef	216	1,104,930	0.184	203,308
Idle	0					
Other	2/					
Woodland	20,034					
TOTAL	1/					
	28,500					
			498,524	337,775	160,749	

<sup>1/</sup> Total does not include 290 acres dedicated woodland and 6,630 acres to remain in woodland.<sup>2/</sup> Farmsteads, farm roads, waste and non-agricultural.<sup>3/</sup> Parenthetical amounts are duplicated acreages.<sup>4/</sup> Calculated from columns 2 and 5; rounded to the nearest unit.<sup>5/</sup> Calculated from columns 2 and 9; rounded to the nearest cent.

Basin: Red River Backwater Area

Project: Tensas Cocodrie Area

Reach: 1

State: Louisiana

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (Based on projected prices)

SUMMARY - TABLE IV B-1

(Zone for Drainage and Flood Control Calculations)

(1) Land use and crop distribution	(2) Acres <u>3/</u>	(3) Production Unit	(4) Per Acre	(5) Total	(6) Value of production Dollars	(7) Cost of production Dollars	(8) Net Return Dollars	(9) Per Unit	(10) Per Acre
Open Land									
Crops:									
Corn	28,500	bu.	58	2,900	1.50	4,350	43.16	2,158	2,192
Soybeans	25,650	bu.	31	99,750	2.50	219,375	33.11	107,610	111,675
Oats (Grain)	3,250	bu.	53	340,600	.95	323,570	33.26	212,888	110,682
Oats (Sup.Past.)	6,400	lbs.beef	214	1,368,000	0.184	251,712	20.72	132,588	119,124
Perm.Pasture	(6,400)	lbs.beef	331	5,282,640	0.184	972,005	44.98	717,383	254,622
Idle	0								
Other	2/								
Woodland	2,850	0							
TOTAL	<u>1/</u>								
	28,500								
					1,801,012			1,172,627	628,385

1/ Total does not include 290 acres dedicated woodland and 6,630 acres to remain in woodland.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to the nearest unit.

5/ Calculated from columns 2 and 9; rounded to the nearest cent.

Basin: Red River Backwater Area  
 Project: Tensas Cocodrie Area  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE II B-2  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1) Land Use and Crop Distribution	(2) Acres <u>3/</u>	(3)	(4)	(5)
		Unit	Production Per Acre	Total
Open Land	1,942			<u>4/</u>
Crops:	1,748			
Oats (Grain)	700	bu.	23	16,200
Oats (Sup. Past.)	(600)	lbs. beef	80	48,000
Perm. Pasture	1,048	lbs. beef	161	168,420
Idle	0			
Other <u>2/</u>	194			
Woodland	69,522			
 TOTAL	<u>1/</u>	71,464		

- 1/ Total does not include 745 acres dedicated woodland.  
2/ Farmsteads, farm roads, waste and non-agricultural.  
3/ Parenthetical amounts are duplicated acreages.  
4/ Calculated from columns 2 and 5; rounded to the nearest unit.

Basin: Red River Backwater Area  
 Project: Tensas Cocodrie Area  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE III B-2  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION,  
 COSTS AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based  
 on projected prices)

Land use and crop distribution	Acres	Unit	(1)	(2)	(3)	(4)	(5)	Value (7)	Cost (8)	(9)	(10)
			Production	Per Acre	Total	Per Unit	of production	of production	Total	Net Return	
Open Land											
Crops	3,442										
Oats (Grain)	3,098	bu.									
Oats (Sup.Past.)	400	bu.	28	11,300	.95	10,735	21.04	8,416	2,319		
Perm.Pasture	2,698	lbs.beef	125	50,000	0.184	9,200	11.29	4,514	4,686		
Idle	0	lbs.beef	168	454,500	0.184	83,628	23.62	63,727	19,901		
Other	2										
Woodland	344										
TOTAL	1/ 47,776										

1/ Total does not include 745 acres dedicated woodland and 23,688 acres to remain in woodland.  
 2/ Farmsteads, farm roads, waste and non-agricultural.  
 3/ Parenthetical amounts are duplicated acreages.  
 4/ Calculated from columns 2 and 5; rounded to the nearest unit.  
 5/ Calculated from columns 2 and 9; rounded to the nearest cent.

**BASIN:** Red River Backwater Area  
**PROTECT:** Texas Cocodrie Area

**SUMMARY - TABLE IVB-2**  
**(Zone for Drainage and Flood Control Calculations)**

**REACH:** 1

## COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION,

STATE: Louisiana

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION,  
PRODUCTION COSTS, AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT  
(Based on projected prices)

(Based on projected prices)

(1) Land use and crop distribution	(2) Acres	(3) Unit	(4) Per acre	(5) Production	(6) Value(7) of production	(8) Cost(9) of Production	(10) Net Return
				Total	Per unit	Total	Per acre
Open land							
Crops	51						
Corn	47,776	bu.	45	208,100	1.50	312,150	36.68
Soybeans	42,998	bu.	30	236,700	2.50	591,750	32.89
Oats (grain)	7,800	bu.	52	398,800	.95	378,860	32.98
Oats (sup. Past)	7,600	lbsf	212	1,614,000	0.184	296,976	250,651
Permanent Pasture	22,948	beef	331	7,594,860	1.184	1397,454	128,209
Other 2/	4,778						
Woodland	0						
<b>Total 1/</b>	<b>47,776</b>			<b>2,977,190</b>		<b>1,865,823</b>	<b>1,111,367</b>

1/ Total does not include 745 acres dedicated woodland and 23,688 acres to remain in woodland.

## 2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Calculated from columns 2 and 5; rounded to the nearest unit.

4 Calculated from columns 2 and 9; rounded to the nearest cent.

5/ Parenthetical amounts are duplicated acreages.

BASIN: Red River Backwater Area  
PROJECT: Tensas Cocodrie Area  
REACH: 1  
STATE: Louisiana

SUMMARY-TABLE IIIC  
(Zone of No Project Benefit)  
COMPUTATION OF AGRICULTURAL PRODUCTION  
EXISTING CONDITIONS

(1) Land use and crop distribution	(2) Acres	(3) Production		(5) Total
		(4) Unit	(4) Per acre	
Open land	0			
Crops	0			
Woodland	<u>29,272</u>			
Total <u>1/</u>	29,272			

1/ Since no conversion and/or benefits are expected, the 29,272 acres will remain in woodland and no table IIIC and IVC was made.

BASIN: Red River Backwater Area  
 PROJECT: Tensas Caddo Area  
 REACH: 1  
 STATE: Louisiana

TABLE V  
 SUMMARY BY SOIL MAPPING UNITS

Soil Unit	Acres	Future without Project		Future with Project		Difference in Net Value
		Gross	Cost	Gross	Net	
1	19,945	614,984	402,595	212,389	3,091,044	1,979,939 1,111,105 898,716
1u	23,847	275,822	175,941	99,881	1,480,870	944,870 536,000 436,119
2	2,484	61,075	41,161	19,914	206,288	113,641 92,647 72,733
Total 1/	76,276	951,881	619,697	332,184	4,778,202	3,038,450 1,739,752 1,407,568

1/ Total does not include 290 acres dedicated woodland and 6,630 acres to remain in woodland in Zone B-1.

Total does not include 745 acres dedicated woodland and 23,683 acres to remain in woodland in Zone B-2.

BASIN: Red River Backwater Area

PROJECT: Tensas Cocodrie Area

REACH: 1

STATE: Louisiana

Zone B-1

TABLE VI  
LAND CONVERSION COST WITH PROJECT

Type of Conversion	Total Acres	Cost of Clearing DOLLARS	Cost of Smoothing DOLLARS	Total Cost DOLLARS
Woodland to Other Land	2,003	120,180	-	120,180
Woodland to Crops	7,200	432,000	36,000	468,000
Woodland to Pasture	10,831	649,860	21,662	671,522
Total for Zone B-1		1,259,702		
Amortization Value (.05478)		69,006		

BASIN: Red River Backwater Area  
 PROJECT: Tensas Cocodrie Area  
 REICH: 1  
 STATE: Louisiana  
 Zone B-2

TABLE VI  
 LAND CONVERSION WITH PROJECT

Type of Conversion	Total Acres	Cost of Clearing	Cost of Smoothing	Total Cost
	DOLLARS	DOLLARS	DOLLARS	DOLLARS
Woodland to Other Land	4,433	265,980		265,980
Woodland to Crops	19,651	1,179,060	98,255	1,277,315
Woodland to Pasture	20,250	1,215,000	40,500	1,255,500
Total for Zone B-2			2,798,795	
Amortization Value (.05478)		153,318		

Basin: Red River Backwater Area  
 Project: Tensas Cocodrie Area  
 Reach: 1  
 State: Louisiana

ANALYSIS OF FARM DRAINAGE SYSTEM COSTS

TABLE VII

Soil Unit & Land Use	Area	Construction Cost		Engineering Cost	Contingency Cost	Total Cost	Annual Equiv. Cost	Annual Maintenance Cost	Total Cost
		Per Acre	Total						
Zone B-1	Acres	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
1 - Cropland	5,316	15.18	80,697	16,139	8,070	104,906	13,585	12,105	25,690
Pasture	8,778	8.34	73,209	14,642	7,321	95,172	12,325	2,196	14,521
1u- Cropland	2,096	15.18	31,817	6,363	3,182	41,362	5,356	4,773	10,129
Pasture	4,108	8.34	34,261	6,852	3,426	44,539	5,768	1,028	6,796
2 - Cropland	554	13.08	7,246	1,449	725	9,420	1,220	1,087	2,307
Pasture	253	8.34	2,110	422	211	2,743	.355	63	418
Sub-total	21,105		229,340	45,867	22,935	298,112	38,609	21,252	59,861
Zone B-2									
1 - Cropland	11,205	15.18	170,092	34,018	17,009	221,119	28,635	25,514	54,149
Pasture	13,640	8.34	113,758	22,752	11,376	147,886	19,151	3,413	22,564
1u- Cropland	6,020	15.18	91,384	18,277	9,138	118,799	15,384	13,708	29,092
Pasture	6,617	8.34	55,186	11,037	5,519	71,742	9,291	1,656	10,947
2 - Cropland	781	13.08	10,215	2,043	1,022	13,280	1,720	1,532	3,252
Pasture	337	8.34	2,811	562	281	3,654	473	84	557
Sub-total	38,600		143,446	88,689	14,345	576,480	74,654	45,907	120,561
TOTAL	59,705		672,786	134,556	67,280	874,622	113,263	67,159	180,422

1/ Installation cost amortized at 5% for 10 years (0.12950)

BASIN: Red River Backwater Area  
 PROJECT: Tensas Cocodrie Area  
 REACH: 1  
 STATE: Louisiana

TABLE VIII  
 ANALYSIS OF GROUP DRAINAGE NEEDS AND COSTS

Item	Unit	Amount	Unit Cost	Total Cost
			DOLLARS	DOLLARS
Excavation	cu. yds.	451,500	0.15	67,725
Right-of-way easements	mi.	21	25.00	525
Crossings	each	5	200.00	1,000
Water Gates	each	8	40.00	320
Vegetation Planting	acres	50	15.00	750
Total Construction Cost				70,320
Engineering Cost				7,032
Contingencies and Legal				7,032
Total Installation Cost				84,384
Annual Equivalent-Installation Cost (Amortized at $3\frac{1}{2}\%$ for 20 years)				5,937
Annual Maintenance cost				<u>3,516</u>
Total annua.. cost				\$9,453

BASIN: Red River Backwater Area  
 PROJECT: Tensas Cocodrie Area  
 REACH: 1  
 STATE: Louisiana

TABLE IX  
 SUMMARY OF ANNUAL NET PRODUCTION RETURNS  
 AND ASSOCIATED COSTS

Item	Total	Discounted Amount $\frac{1}{1+i}$	Total	Discounted Amount $\frac{1}{1+i}$
1. Net Return with project	628,385	1,111,367		
2. Net Return without project	160,749	171,435		
3. Gross benefit to project	467,636	290,528	939,932	583,952
4. Farm Drainage Cost				
a. Installation Cost	38,609	74,654		
b. Maintenance Cost	21,252	45,907		
c. Total Cost	59,861	120,561	74,901	68
5. Group Drainage Cost				
a. Installation Cost	0	5,937		
b. Maintenance cost	0	3,516		
c. Total Cost	0	9,453	6,407	
6. Conversion Cost				
a. Installation Cost	69,006	42,871	153,318	95,252
7. Gross benefits to authorized and proposed projects	290,528		583,952	
8. Less Associated costs	80,061		176,560	
9. Net return to authorized and proposed projects	210,467		407,392	
10. Net return times 20% attributable to project in Zone B-1 and 100% in Zone B-2	42,093		407,485	
11. Total net benefit to proposed projects Zones B-1 and B-2.				449,485

1/ Item 3, 4, and 6 discounted for a 20 year lag at 5%. (.62127)  
 Item 5 discounted for a 20 year lag at 3½%. (.67774)



